OUTLINES

OF

MIDWIFERY, &c.

STRUCTURE OF THE PELVIS.

THE important and inseparable connexion between structure and function, and the impossibility of an accurate acquaintance with the latter, without an intimacy with the former, must ever secure attention to the *anatomy of the pelvis.*

The PELVIS* is that assemblage of bones which are united to the trunk above, by the last lumbar vertebra; and to the extremities below, by the insertion of the heads of the thigh bones into the acetabula.

The *adult* pelvis consists of *four* bones, viz.:

Two, Ossa Innominata,
One, Os Sacrum,
One, Os Coccygis.

* The term *pelvis* is derived from πελυξ, from its supposed resemblance to a barber's basin without a bottom.

The OSSA INNOMINATA * form the sides and front of the pelvis. At birth, and for some time afterwards, each os innominatum consists of *three* distinct bones, named,

Ilium,
Ischium, and
Pubis;

and although they do not continue separable in the adult, yet the nominal division is retained.

The ILIUM†, or haunch bone, forms the superior and largest portion of the os innominatum. The upper part of this bone is called the *crista*, crest, or spine, having an external and internal *labium*. It gives origin to the oblique and transverse muscles of the abdomen. It has two processes, the anterior and superior spinous process, from which the sartorius and tensor vaginæ femoris muscles originate; and the anterior and inferior spinous process about an inch below the former, from which arises the rectus femoris. The outer part of the ilium bears the name of *dorsum*, and the inner of *venter*. From the former the glutei muscles originate; and from the latter, the iliacus internus. That part of the bone which joins the sacrum, is termed *the bird's head articular surface*.

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* These bones have the name of *ossa innominata*, or nameless bones, because they are thought not to resemble any known object.

† This bone derives its name from ειλεια, because it is said to support the *ileum* and other small intestines.

The ridge of bone which surrounds the brim of the pelvis is termed *linea innominata.*

The ISCHIUM*, or hip bone, forms the inferior part of the os innominatum. The narrow and lowest part, on which we sit, is called its *tuberosity*, and is covered with a thick defensive cartilage. That portion of this bone which joins the pubis is named its *ramus.* The spinous process at the inferior and posterior part, gives origin to the internal sacro-ischiatic ligament. Just above this process is the *ischiatic notch.*

The PUBIS†, or share bone, is the anterior and smallest part of the os innominatum, and is nominally divided into head, or tubercle, body, and crura, which form the arch. At the termination of the body, the surface is rough, and united to the opposite os pubis by a thick cartilage and by ligamentous fibres, constituting the *symphysis pubis.*

Between the pubis, ilium, and ischium, is an oval opening called *foramen ovale,* or *thyroideum,* which is nearly covered with the *obturator ligament.*

Viewing the OSSA INNOMINATA *obstetrically*, there are several things deserving particular attention; such as, the *concave surfaces of the ilia,* which are so spread outwards as to permit the uterus freely to expand during gestation; the *inclined planes of the inferior parts of the ischia,* which slope obliquely towards the

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* The *ischium* is so called from ισχυω to support.

† This bone is termed *pubis*, from βυϐων the groin.

pubis, disposing the vertex in its descent during parturition to move forwards towards the arch of the pubis; and the *superior edge of the pubis* which slopes outwards, so as to favour the sliding of the head of the child into the pelvis.

The Os Sacrum* forms the posterior part of the pelvis, being the basis of the vertebral column. It is concave before, and convex behind, and is usually perforated by four pair of holes for the transmission of the sacral nerves. The upper and projecting part is called its *promontory*. At birth this bone is composed of five or six portions similar to vertebræ, united together by intervening cartilages; but in the adult these are obliterated by anchylosis, although they retain some resemblance to vertebræ, with their oblique, transverse, and spinous processes.

The Os Coccygis† is a little bone at the apex of the sacrum, to which it is united by an intervening cartilage; it is also called *rump and huckle* bone. It consists of three or four irregularly shaped triangular pieces, which usually admit of considerable mobility during parturition; which process is interfered with when anchylosis takes place between them and the sacrum. The os coccygis affords support to the pelvic viscera.

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* From *sacer*, it being deemed by the ancients a sacred bone, and was offered by them in sacrifices.

† The *os coccygis* is thought to resemble the bill of a *cuckoo*, and therefore has derived its name from κοκκυξ.

JUNCTION OF THESE BONES.

The bones of the pelvis are united by various ligaments, and there being no motion, the union is termed *synarthrosis.*

The *sacrum* and *ilia* are joined by a thin layer of cartilage, and therefore the union is termed *symphysis.* Firm union is also given by the *internal and external sacro-iliac* ligaments.

The *sacrum* and *ischium* are united by the *internal and external sacro-ischiatic* ligaments, the former being inserted in the spinous process of the ischium, and the latter in the tuberosity of that bone. The *ossa innominata* are firmly bound together at the symphysis pubis, not only by a strong cartilage interposed between the articulating surfaces, but also by powerful ligamentous fibres running in all directions.

This joint is sometimes attacked with *strumous inflammation,* which if not early arrested by well adapted remedial means, is followed by suppuration, caries, anchylosis, and sometimes by death.

Its *symptoms* are, heat and pain at the symphysis pubis, greatly augmented by motion, or warmth.

The *treatment* during the inflammatory stage consists in the liberal abstraction of blood by leeches and cupping, purgatives, the constant application of ice or cold lotions, and low diet. Should *suppuration* follow, poultices, fomentations, and nutritious diet, with cordial and tonic

medicines, must be substituted; and to prevent caries of the extremities of the ossa pubes, a free opening should be made, as soon as fluctuation is distinct.

The *os coccygis* and *sacrum* are united by an intervening cartilage, and the sacro-coccygeal ligament.

The *uses* of the pelvis are, to support the vertebral column, and upper parts of the body; and to give lodgement to a portion of the small intestines, the urinary bladder, rectum, and internal organs of generation.

DISTINCTIONS BETWEEN THE ADULT MALE AND FEMALE PELVIS.

First, the long diameter of the brim in the *female* is from side to side, or rather from one sacro-iliac symphysis to the opposite acetabulum; but in the *male*, it is from before backwards; *secondly*, the ilia are more distant; *thirdly*, the tuberosities of the ischia are more remote from each other; *fourthly*, the acetabula are smaller, and much further separated; *fifthly*, the angle of the pubis is larger, and this is favourable to the emergence of the child's head at birth; *sixthly*, the sacrum is less curved; and, *seventhly*, the whole pelvis is less massy, but more capacious and shallow in the female, than in the male.

DIMENSIONS OF THE ADULT FEMALE PELVIS.

Three parts must be noticed, and their dimensions accurately ascertained,

The *Brim*, or superior aperture ;

The *Cavity* ;

The *Outlet*, or inferior aperture.

The BRIM is bounded posteriorly by the promontory of the sacrum ; and laterally and anteriorly by the linea innominata.

Its *shortest diameter* is from the symphysis pubis to the projection of the sacrum, and, *without the soft parts*, measures *four inches and a half ; with the soft parts, three inches and five-eighths.* Its *lateral or middle diameter*, described by a line drawn from one point of the linea innominata to the opposite point, is *five inches and a quarter without the soft parts ;* or *four inches*, if they remain as in the living subject, and with which we have principally to do. The *longest diameter* is found by a line drawn from either sacro-iliac symphysis to the opposite acetabulum, and this *with the soft parts* attached to the pelvis, measures *four inches and five-eighths.*

The CAVITY of the pelvis, is that part which is between the superior and inferior aperture, and contains the pelvic viscera.

Its diameter in all directions is nearly the same, being rather longer between the spinous processes of the ischia than from before backwards.

Obstetrically, it is important to be familiar with the *depth* of the cavity in different directions.

Posteriorly, it is about *six inches* deep ;

Laterally, *four inches*;

Anteriorly, *two inches.*

The OUTLET of the pelvis, when viewed with the sacro ischiatic ligaments attached to it, assumes a quadrangular shape.

Its *shortest diameter* is from one tuberosity of the ischium to the other, and is about *four inches*, the soft parts remaining; its *longest diameter* is from the apex of the os coccygis to the arch of the pubes, and measures *five inches*, including one which it acquires from the mobility of the coccygeal bone permitting it to recede in most women, as the head of the child passes during its extrusion. Unless these dimensions be borne in mind, malposition of the head cannot be rectified, nor can any correct opinion of the progress or duration of labour be given.

AXIS OF THE PELVIS.

Without a correct knowledge of the axis of the brim, cavity, and outlet of the pelvis, manual and instrumental assistance cannot be advantageously afforded. The line of the axis of the vertebral column is perpendicular to the horizon. The axis of the *brim* of the pelvis is discovered by a straight line from the umbilicus to the apex of the os coccygis.

The axis of the *cavity* is determined by a female catheter of the usual curvature; one extremity being fixed about the centre of the superior aperture of the pelvis, and the other at the os externum.

The axis of the *outlet* is found by placing one end of such a catheter on the centre of the first bone of the sacrum, and the other at the entrance to the vagina.

In all manual operations, the line of the axis of the pelvis at its different parts must be strictly regarded.

Deformity and *distortion* of the pelvis, as they relate to parturition, will be practically considered under the head of *protracted labour*.

DESCRIPTION AND DIMENSIONS OF THE FŒTAL HEAD.

The *fœtal head* must be viewed in connexion with the admeasurements of the adult female pelvis.

The passsage of the head of a child through the pelvis of its mother, secures the expulsion of the trunk and extremities, because the cranium is proportionably much larger than the other parts of the body of the fœtus.

At birth, the *os frontis* consists of *two* distinct bones; the *os occipitis* of *four* portions; and the *ossa temporalia* are divided also into *four* bones; so that these with the TWO *ossa parietalia* present us with *twelve* bones; and these are united by as many sutures*, which

* The term *suture* is not correctly employed here, because the bones are not united in the fœtus by dentiform margins as in the adult, but are connected by the dura mater and pericranium, so that, scientifically speaking, the term *syneurosis* should be substituted for *suture*. The latter is retained, because most writers and teachers employ it in this connexion.

admit of extensive motion, so that by pressure during parturition, the bones approximate and overlay one another and materially lessen the size of the head. These *sutures* connect the bones together very loosely.

It is highly necessary to be familiar with three of these sutures; the *sagital* which runs in a straight line from the nose to the occipital bone; the *coronal* which connects the parietal and frontal bones, running from ear to ear; and the *lambdoidal* suture, which, taking an angular course at the posterior part of the cranium unites the occipital to the parietal bones.

The angles of the bones of the fœtal head are generally defectively ossified at birth, and this deficiency forms at the front part of the cranium, where the frontal and parietal bones meet, the *anterior fontanel*, (bregma or fontanella) and this interstice is quadrangular in its shape. At the back of the head there is a smaller and a triangular space termed the *posterior fontanel*.

The practical application of an acquaintance with the course of the sutures, and with the situation and shape of the fontanels, is found in parturition; when it is highly expedient to ascertain not only the *presentation*, but the *position* of the presenting part to the circumference of the pelvis, a circumstance very necessary to be known in all cases of malposition, which admit of being so rectified as to secure a correspondence between the diameters of the head and pelvis.

The *dimensions* of the fœtal head cannot be correctly

given, because during parturition it undergoes so much and such varied compression and alteration in bulk and shape.

Exclusive of this diminution in its size by pressure as it passes through the pelvis, its

Longest diameter, or from vertex to chin, is about FIVE INCHES: and its

Shortest diameter, or from the protuberance of one parietal bone to the other, about THREE INCHES AND A HALF.

If then the longest diameter of the superior aperture of the pelvis in the living subject, be about four inches and five-eighths, and the shortest diameter, three inches and five-eighths, no difficulty from this cause can be experienced by the fœtal head, on its entrance into the pelvis, provided it be well formed, and the presentation and position of the cranium be favourable.

The *shape* of a fœtal head is eliptical, and the average size of the cranium of males at birth, exceeds that of females by about a thirtieth part.

Obstetrically viewed, several important suggestions force themselves on our notice here; the diminution of the bulk of the fœtal cranium during parturition; the almost uniform presentation of the vertex, in consequence of the occiput being near the vertebral column, so that uterine power exerted on the body of the child, inevitably depresses the front of the head; and the equally constant and favourable position of the cranium, so that the

longest diameter of the head corresponds with the longest diameter of the pelvis, and vice versa. These are so many evidences of original, wise, and merciful design.

STRUCTURE AND FUNCTIONS OF THE ORGANS OF GENERATION AND THEIR APPENDAGES.

The *Mons Veneris* is a soft and prominent covering to the symphysis pubis, formed by the common integuments which are elevated by fat, and at the age of puberty, covered with hair; below this are the *labia pudendi* which are two large soft lips, formed by a duplicature of the common integuments, having interposed, adipose substance. Their internal surface is smooth and studded with numerous sebaceous glands. These labia commence from the symphysis pubis, and are continued down to the *perineum*, which is the portion of common integuments, about an inch and a half in breadth between the termination of the labia and the anus; the labia pudendi at their lower junction, bear the name of *frænum labiorum*, and by the French, *fourchette*.

On separating the labia, there is a sulcus called *fossa navicularis*, and the first thing to be noticed is the *clitoris*, which is a little organ of extreme sensibility and somewhat analagous in its structure to the male penis. Although it has neither urethra or corpus spongiosum,

It has a glans covered with prepuce, and corpora cavernosa, which take their origin from the two crura of the rami of the ischia.

Originating from the prepuce of the clitoris are the *nymphæ*, or inner and smaller labia, composed of folds of the common integuments, highly vascular, and having interposed between their doublings a spongy substance, which is principally composed of ramifications of the pudic artery.

The *nymphæ* gradually enlarge as they pass downwards, and when they have reached the commencement of the orificum vaginæ, they disappear. Their inner surface is abundantly studded with numerous sebaceous glands. The principal use of the nymphæ appears to be, to admit of greater dilitation of the parts during parturition, and to direct the flow of urine.

In the prosecution of an examination of these parts, on separating the nymphæ, the *orificium urethræ*, or *meatus urinarius* is seen, having an elevation surrounding its lower segment, and situated about an inch below the clitoris, and the third of an inch above the entrance into the vagina.

The female *urethra* does not exceed two inches in length, having a much larger calibre than the same canal in men. Its inner surface is a continuation of the mucous lining of the bladder, and is liberally supplied with lacunæ or follicular glands, which secrete mucus to lubricate the parts, and defend them from the irritation

that might otherwise be produced by the urine. One large lacuna is found on each side of the orifice. The course taken by the urethra is that of a strait line along the upper part of the vagina, where it may be felt as a cord; but on reaching the inner edge of the symphysis pubis, it becomes curved upwards.

DIRECTIONS FOR INTRODUCING THE CATHETER.

This operation, simple as it may appear, is one which is generally very awkwardly performed. This is in some degree attributable to the existing circumstances, which demand the use of this instrument. From the connexion of the bladder and uterus, the former inevitably rises with the latter during the progress of utero-gestation, and often becomes thrown considerably forward; and the same thing occurs in women having distorted pelves, or pendulous bellies, independent of pregnancy; so that the urethra becomes elongated and preternaturally curved. It is also very much thrown out of its natural course in procidentia and inversio uteri.

That position is best, both for the patient and medical man, which gives him the most command of parts, and consequently, without any exposure of her person, the woman may lie on her back with her knees elevated and separated. The opera or standing on her right side, with the catheter previously oiled in his right hand, is to carry his left hand over the right thigh, and with the

index finger to separate the labia and nymphæ, and to discover the clitoris. The catheter held in the right hand of the practitioner, is now to be carried under the patient's thigh to the orificium urethræ, which may generally be easily found, by allowing its extremity to follow the under finger of the left hand downwards, about an inch below the clitoris, till it arrives at a semi-circular prominence, about a third of an inch before reaching the upper edge of the orificium vaginæ. It then usually slips into the urethra; but sometimes into one of the large lacunæ found at its entrance.

Under circumstances already alluded to, and in some cases of protracted labour, such is the elongation and distortion of the canal, that a male flexible catheter is requisite.

And here it may be noticed, that such is the alteration in the relative situation of parts in procidentia and inversio uteri, that although the catheter must be introduced and carried forwards to the pubes, with the point directed in the usual course, yet when it has reached the symphysis, its handle must be so elevated towards the abdomen, that the extremity of the instrument should be directed towards the knees.

Under other circumstances, such as the bladder being over the pubes, when the abdomen is pendulous, the handle must be as much depressed, immediately after the point has cleared the symphysis pubis.

Female catheters are usually too little curved.

Previously to being used, the instrument should have its stilette withdrawn, and a moistened bladder tied on the extremity of its handle, into which the urine may flow after the introduction of the catheter into the vesica. This plan would obviate the almost unavoidable necessity for wetting the bed, as the operation is commonly performed.

VAGINA.

The orifice of the vagina is found about a third of an inch below the meatus urinarius.

The vagina itself, is the canal which conduets to the uterus, and terminates just above the mouth of that organ.

It is composed of a *villous*, *muscular*, and *peritoneal* coat, and is connected with the contiguous parts by condensed cellular texture.

The vagina is plentifully supplied with arteries, veins, nerves, and absorbents.

Its course is somewhat curved, making an obtuse angle with the uterus. It is commonly about four inches in length, and two in diameter during virginity, being narrower at its commencement, and termination, than in the middle. Its capacity becomes much increased in women who have borne children.

Its entrance is bounded by a sphincter muscle, and by a congeries of blood vessels, arranged like net work, and termed *plexus reteformis*.

At the orifice of the vagina are several (usually about four) fleshy appendices, which from their supposed resemblance to myrtle berries, are called *caruncùlæ myrtiformes.* They are not, as is generally affirmed, the remains of the ruptured hymen, for they may be found when it remains entire.

Just within the orificium vaginæ is the *hymen,* a thin membrane, with which it is almost closed. In many girls it is wanting, and when existent often lies folded loosely in wrinkles, until just before puberty, when it becomes developed and expands. It differs very much in form in different women, but mostly resembles the iris of the eye, being attached at its circumference, but having a semicircular opening at its centre for the escape of the menstrual secretion.

Sometimes it is *cribrated,* at other times altogether *imperforated.*

UTERUS.

This organ, which is found between the female bladder and rectum, is destined for the reception of the fœtus, which it usually retains until it is expelled as a perfect child, at the expiration of *forty weeks* from conception.

The unimpregnated uterus is in shape not unlike an oblong gourd; but when impregnated, it assumes an oval form.

This organ is divided into *fundus, corpus, cervix,* and *os.*

The *fundus* is that portion which is above the insertion of the fallopian tubes.

The *corpus*, or body, is the narrow part which is between the fundus and neck of the womb.

The *cervix*, or neck, is the narrow portion below the body and the *os*, or mouth, or *os tincæ* (from its supposed resemblance to the mouth of a tench) or *os internum*, is the extremity of the cervix, divided by a transverse fissure, the two edges of which are called *labia*.

In *length*, the unimpregnated uterus is about three inches: in *breadth*, two inches at the fundus, and one inch at the cervix: and in *thickness*, the parietes are about a third of an inch. These admeasurements are liable to considerable variations.

The *cavity* of the uterus is triangular in its shape, being lined by a continuation of the smooth and highly vascular villous covering of the vagina. This lining is folded at the cervix uteri, where the duplicatures are beautifully arranged in an arborescent form, and on this account termed *arbor vitæ*, or *arbor Morgagni*. Between these duplicatures there are numerous follicular glands.

Structure. Nerves, arteries, veins, absorbents, and muscular fibres all connected by dense cellular structure, enter into the composition of the uterus. Its *nerves* are derived from the meso-colic plexus, the sacral and great sciatic, which by their connexion with the intercostal, establish sympathy with various parts of the body.

Its *arteries* are four: two *spermatic*, which are distributed to the fundus uteri and the appendages of the uterus: and two *hypogastric*, which supply the cervix and corpus. These vessels freely anastomose with each other.

Its *veins* bear the same names as the arteries. The right spermatic veins terminate in the vena cava, and the left in the emulgent. The hypogastric empty themselves into the external hemorrhoidal and internal iliacs.

Its *absorbents* are very numerous, though small. In the gravid uterus, their diameter becomes much augmented, and they may be distinctly seen on the surface, and in the substance of the organ. They pass into the iliac glands.

Its *muscular fibres* run in all directions, taking an orbicular, transverse, and reticulated course. At the cervix uteri, and at its superior angles, these fibres may be most distinctly seen*

APPENDAGES OF THE UTERUS.

These are the *ligamenta lata* and *rotunda*, the *tubæ Fallopianæ*, and the *ovaria*.

The peritoneum is reflected over the anterior and superior parts of the uterus. The lateral duplicatures of it, form a broad expansion, and envelope the fallopian

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* *Vide* an instructive paper on this subject by Mr. Charles Bell, in the 4th vol. of the Medico Chirurgical Transactions.

tubes, ovaria, and vessels. These doublings are called the *ligamenta lat.* or broad ligaments.

The *ligamenta rotunda*, or round ligaments, are about the size of a goose quill, and arise from the superior angles of the fundus uteri, and proceeding obliquely downwards and outwards, pass out through the ring of the external oblique muscle, to be distributed about the mons veneris and contiguous parts.

The *tubæ Fallopianæ* derive their name from Fallopius, who first clearly demonstrated them. They are two muscular tubes, of about three inches in length, proceeding from the superior angles of the uterus. They run across the pelvis, become smaller and more serpentine in their course, and terminate as an expanded opening, with fringed edges, and hence termed *fimbriæ* : these extremities float loosely in the pelvis, not being included in the ligamenta lata. The inner covering of these tubes is a plicated continuation of the highly vascular coat of the uterus. The fallopian tubes are the medium of communication between the uterus and ovaria.

The *ovaria* are two flattened oblong bodies, situated a little below the tubes, and about an inch and a half from the uterus. They consist of a semi-cartilagenous substance, principally composed of a number of highly vascular vesicles united by cellular structure. These vesicles were first described by De Graaf, and are consequently called *vesiculæ Graafianæ*, and are probably so many ova

charged with the rudimental matter of the future children.

When from venereal, or other excitement, these vesicles burst, they become converted into opaque bodies, which from their yellow colour, are termed *corpora lutea.*

PHYSIOLOGY OF THE UNIMPREGNATED UTERUS.

The uterus has but one function to perform,—that of *menstruation ;* which is a secretion of a reddish serous fluid from the cavity of the uterus, commencing in temperate climates at about the *fourteenth* year, and usually recurring every lunar month, or twenty-eight days, and hence called *menses*, and sometimes *catamenia.* It recurs with surprising regularity, when once established, through *thirty* years, or until the woman attains to the age of from *forty-four* to *fifty.* In hotter countries, the catamenial discharge commences as early as the *tenth* year ; whilst in colder regions it often does not appear before the *twentieth* year, and instead of recurring monthly, there will be an interval of three months between each period.

The time of the first appearance of the secretion, depends much on the temperament, habits of living, &c. and on these circumstances also, the *quantity* secreted is very dependent.

The *average quantity* in this country is about *four ounces*, which is generally about *four days* in flowing.

The menses do not contain fibrine, consequently the secretion does not coagulate.

Most women are more or less indisposed by vascular fulness and excitement, not only previously to and during the *first* secretion, but on every subsequent recurrence of the discharge. It is usually preceded by lassitude; darting pains through the mammæ, with fulness of these glands; vertigo; and uneasiness in the loins and thighs, with dyspepsia, &c.

Source; undoubtedly from the internal surface of the uterus and upper part of the vagina.

Cause, unknown; referable only to a law established by the God of nature.

Use; to fit and preserve the uterus, in a condition suited to all the purposes of gestation. During pregnancy and lactation, the menses cease to flow.

This secretion is the most unequivocal and best individual proof of *puberty*, at which period the mons veneris becomes covered with hair, the breasts begin to be developed, and all the uterine organs to be evolved.

Independent of that *temporary* suspension of the menstrual secretion, which usually takes place during pregnancy and lactation, there is a time at which it *finally* disappears, and this is deemed in general by females, a most important epoch in their lives. In our country this event occurs about the 44th, or from that to the 50th year; it is popularly called the *dodging time*, (from the irregular intervals between the successive appearances of the discharge) and the *turn of life*. The whole system is usuallyin a state of congestion; or determination of blood takes place to particular organs.

At this time, and with these symptoms, women should live sparingly, take a few doses of a saline purgative, and if necessary, loose a little blood.

PREMATURE MENSTRUATION.

Some girls of full relaxed habits, menstruate in this country, a year or two before the usual time at which this secretion should appear; on investigation, such females will usually be found to be the subjects of congestion of the whole system, and will often cease to be *unwell* as it is termed, for months and even years after loosing a little blood, and taking a saline purgative every third or fourth morning for a few weeks, with plain diet and daily pedestrian exercise.

Some well authenticated instances are recorded of children who have menstruated; but most of these cases, like those of old women, who are said to have the catamenial secretion, are sanguineous discharges from a diseased uterus or vagina.

EMANSIO MENSIUM.

The non-appearance of the menses at the usual time, is sometimes called *amenorrhæa; retentio mensium;* and *chlorosis* or *green sickness*, from the dirty yellowish green hue assumed by the countenance.

When the catamenia do not appear at the usual time, the girl sooner or later complains of general lassitude, with indisposition and inability, to make either mental or bodily exertion without great fatigue; she often suffers

from dyspnæa; disturbed sleep; impaired or depraved appetite; sense of fulness and dull pain in her loins, with a dark and dirty yellowish green colour of the entire surface of the body. The temperature of the skin is diminished, and every symptom indicates deficient power and action.

Cause.

This is somewhat obscure. In some cases it has resulted from defective ovaria, and in almost every instance, there are unequivocal evidences of a torpid condition of the arterial and lymphatic system, and particularly of that part of them which concerns the uterus.

Treatment.

The indications of cure are *two:*

First. To give tone and energy to the general system; and

Secondly. To stimulate the uterine organs.

The *first indication*, is to be accomplished by preparations of iron, such as the mistura or pilula ferri composita; zinc; calumba; and other vegetable bitters, combined with ammonia or myrrh; and the cold salt water bath, if there be sufficient *vis vitæ* to secure that re-action on which the beneficial result of cold bathing so much depends.* To these medicinal means may be

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* Delicate persons who are apparently unable to bear cold bathing, may often be brought to derive advantage from its employment, if before going into the bath, they walk until the circulation becomes somewhat quickened, without producing

superadded moderate daily exercise on horseback, or on foot, in pure air; with plain nutritious diet, rather to invigorate than stimulate the system.

The *second indication* is to be secured by the exhibition of aloetic purgatives and enemata twice a week; by the use of the hip bath, with warm salt water, daily; and warm woollen clothing, especially on the feet. Sometimes a course of Bath waters have been beneficial; and a cautiously conducted ptyalism has succeeded, when ordinary measures have failed.

SUPPRESSIO MENSIUM.

The catamenial secretion, when once established, generally recurs with surprising regularity; but sometimes it becomes suppressed by other causes than utero-gestation, or lactation, or uterine disease.

This discharge may be obstructed either before or during the flow of the menses; and although the obstruction not unfrequently exists for some time without constitutional or local disturbance, more frequently, general febrile excitement, followed by dyspepsia and debility, with vicarious hemorrhage from the nose, lungs, stomach, or from some open wound, attended with considerable local distress, are the consequences.

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perspiration; and if instead of remaining sometime in the water they make only one plunge, and immediately employ friction, and dress themselves.

Causes.

The application of cold and humidity to any part of the surface of the body, or to the extremities; powerful mental emotions; and any thing enfeebling the constitutional or uterine powers; such as, low living, impure air, frequent abortion, immoderate sexual intercourse, leucorrhœa, &c.

Treatment.

The management of suppressio mensium must depend on whether the suppression be *occasional* or *established*.

Should it be *occasional*, (by which term is meant the sudden and casual suspension of the secretion, either before or during its flow) the symptoms are usually acute, and require the abstraction of blood locally and generally; saline purgatives; and the warm hip bath. Should there be much uterine pain, from five to ten grains of the extractum hyoscyami, with half the quantity of the extractum papaveris, will afford relief; particularly if conjoined with the abstraction of blood from the vicinity of the uterus by leeches or cupping.

But should the suppression have become *established*, it will be highly necessary to ascertain whether or no it is connected with any disease of the uterus. If it be not, the case demands the same treatment as is recommended in emansio mensium*.

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* Vide page 24.

DYSMENORRHŒA, OR PAINFUL MENSTRUATION.

This diseased condition of the menstrual secretion, occurs principally to women who menstruate sparingly; and they are usually barren. It is accompanied with considerable suffering: there is generally severe uterine pain, which is augmented by external pressure, and attended with a sense of bearing down of the uterus. The secretion is often mixed with coagula and filaments of a membrane very similar to the *decidua* uteri.

Cause.

Constriction of the secerning vessels of the uterus, with rigidity of muscular fibre.

Treatment.

During the secretion of the menses, local bleeding is decidedly useful; the hip bath, with warm water, may be used twice a day; and as often, an enema should be thrown into the rectum, consisting of at least a pint of thin gruel or warm water, with a drachm of tincture of opium. Full doses of the extractum hyoscyami, with camphor and opium, combined with nauseating medicines, will sometimes afford considerable relief. Some such combination as the subscribed may be advantageously used.

R.	Gummi opii,	gr i.
	Extracti hyoscyami,	gr x.
	Antimonii tartarizati,	gr ss.
	Camphoræ,	gr x.

Fiant pilulæ tres : omni hora, donec dolor sublevetur sumendæ.

During the interval, local bleeding should be employed once every week ; an aloetic laxative must be daily exhibited ; the warm hip bath should be had recourse to once a day ; and regular exercise strongly enforced. A well conducted course of mercury, so as to keep the system sensibly under its influence for several weeks, has, in a few instances, been beneficial.

MENORRHAGIA.

By menorrhagia is meant, an immoderate secretion of the menstrual discharge, either in the *quantity* which flows at the usual time ; or in the *frequency* of its recurrence.

It is distinguished from uterine hæmorrhage, by the dicharge being destitute of fibrine, and consequently it does not coagulate.

Causes.

A plethoric condition of the system, with uterine congestion, and this generally connected with lax fibre and deficient tone in the extreme vessels of the uterus.

Treatment.

Every circumstance and pursuit ; with all such articles of food as accelerate the frequency, and increase the force of the action of the heart and arteries, must be sedulously guarded against.

During the term of menstruation, absolute quietude of mind, and body in a recumbent posture, must be enjoined; and cold may be applied to the pubes and loins. Should there be much vascular action, the *potassæ nitras*, in doses of five grains every hour, is useful; but if the pulse is feeble, the mineral acids liberally exhibited, sustain the vital powers, and perhaps constrict the secerning vessels.

During the interval, a few ounces of blood may be advantageously removed from the uterine region; an injection composed of equal parts, of the *liquor aluminis compositus*, and *aqua distillata*, should be injected per vaginam, three times a day; the hip bath, cold; or the application of cold water to the loins and pubis, by the bidet, or by a sponge or cloth, ought to be employed every morning; and if convenient, sea bathing may be tried. In addition to these means, sexual separation, with dry diet, and moderate regular exercise, must form part of the plan of treatment.

CONCEPTION.

Before entering on an examination of the contents of the gravid uterus, the obscure but interesting subject of *conception*, merits at least a glance; and a deeper investigation of it would convince the enquirer, that scarcely any practical advantage could result from the pursuit.

It appears to be essential to fecundation, that on the part of the *female*, the ovaria be in a healthy condition, and all the passages to them unobstructed; on the part of the *male*, the testes must be in a healthy state, so that semen be secreted; and that there be both in the male and female a determination of blood to the whole genital system, constituting the venereal œstrum; and as the immediate cause of impregnation, there must be sexual intercourse.

The male semen being transmitted along the vagina, through the uterus, by the tubæ Fallopianæ, stimulates one or more of the vesiculæ Graafianæ, which appear to contain, *ab origine*, the rudimental matter of the fœtus.

The fimbriated extremities of the tubes expand and embrace the ovaria, having become during the coitus, ready to receive the ovum, which is about to escape from the ovarium. The impregnated ovum bursts through the peritoneal covering of the ovarium, and enters the

grasping and open extremity of the tubæ Fallopianæ, of the fecundated side, along which it is conveyed into the uterus in about three weeks after conception, there gradually to undergo its complete development.

OVUM.

The result of conception having been traced into the uterus, it is there found containing within itself, the primordeal parts of a perfect child, concealed from the sense of sight by their minuteness and transparency.

At this time, it has two membranous coverings having a gelatinous substance interposed between them: they are, the

Chorion, and

Amnion;

the latter being the inner, and the former the outer covering of the fœtus. These, with the

Liquor amnii;

a fluid secreted by the amnion, and in which the fœtus is suspended, constitute the complete ovum.

Immediately after conception, the vessels of the interior and highly vascular surface of the uterus, take on increased action, and secrete a thick, extremely tender and lacerable, and cribriform membrane, which may be divided into two laminæ; the one in contact with the uterus bearing the name of

Tunica decidua uteri;

and the other, which from being reflected on the first, is called, *Tunica decidua reflexa.*

The tunica decidua uteri, remains as the proper membrane of the uterus until after parturition, when it is discharged with the lochiæ; but the tunica decidua reflexa, continues only until between the fourth and fifth month, when (being no longer required to support the ovum in utero, or to form the placenta, (which appear to be its uses) it becomes absorbed and disappears; so that, in the *early months* of utero-gestation, there are *four* membranes, the *amnion*, *chorion*, *tunica decidua uteri*, and *tunica decidua reflexa;* but in the *latter months*, there are only *three*, in consequence of the absorption of the tunica decidua reflexa.

The *liquor amnii*, which distends the involucra or membranes, seems principally intended to preserve the delicate fœtus from the pressure of the uterus during utero-gestation; and during parturition, to perform the office of a soft and inimitable wedge, by which the os uteri and other parts are prepared for the passage of the child.

PLACENTA AND FUNIS UMBILICALIS.

The *placenta*, or after birth*, constitutes the medium of communication between the mother and child. It is a thick, soft, round, lobulated, spongy, vascular mass, adhering by vessels to the fundus, or anterior and su-

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* The *placenta* derives its appellation from πλακους, a cake, which it resembles

perior part of the uterus, and connected to the fœtus by the funis umbilicalis.

It consists of a maternal and fœtal portion, which have no communication by continuity of canal, so that injection by the uterine vessels does not pass into the fœtal part of the placenta, nor by the umbilical vessels into the maternal portion.

The maternal or cellular half of the placenta appears to be secreted by the decidua, and the fœtal half, or that portion which is formed by the two umbilical arteries ramifying minutely over the maternal cells, is probably secreted by the shaggy and external layer of the chorion.

The placenta is not to be seen as an appendage to the ovum till nearly the completion of the second month.

Functions analogous to *respiration* and *nutrition* are performed by the placenta.

In the human female, the number of placentæ usually correspond with the number of children.

The *funis umbilicalis*, or navel-string, is that canal which connects the mother and child.

It is composed of two arteries, which originate from the internal iliacs of the child; and of one vein which returns the blood from the placenta to the fœtus. These vessels are united by a gelatinous substance, and enveloped by a sheath. The funis is usually about twenty inches in length, and the vessels run in a tortuous direction.

FŒTAL STRUCTURE AND PECULIARITIES.

So minute are the different parts of the fœtus for some time after impregnation, that for several weeks, even when submitted to microscopic examination, it presents itself, only as a gelatinous, semitransparent, greyish mass.

At the *fourth week* of utero-gestation, there exists an oviform mass, of about the size of a hazel-nut, consisting of the chorion, with a beautiful shaggy covering, composed of the vessels of the amnion, liquor amnii, and fœtus, which appears only as an opaque spot, not exceeding in size a large ant.

By the *fifth week*, the fœtus resembles in shape and size the malleus of the internal ear, being about a quarter of an inch in length. About the *sixth week*, it resembles the section of a French bean in its form ; the budding extremities may be traced, and its head and body are nearly equal in size.

At the *seventh* or *eighth week*, all the parts are distinctly formed, and the fœtus is from one to two inches in length, and about three drachms in weight.

During the *third month*, the length is about six inches.

By the *fifth month*, it is usually ten inches long ; and

At *seven months*, it is about fifteen inches in length.

At the termination of the *ninth month*, or the full period of utero-gestation, the average length is twenty inches, and the average weight, seven pounds.

PECULIARITIES OF THE FŒTUS.

The *kidneys, capsulæ renales, and liver*, are disproportionately large; the *lungs* are nearly black, collapsed, and of greater specific gravity than water. Until the seventh month, the pupil is covered with a highly vascular membrane, termed *membrana pupillaris;* in the anterior mediastinum, there is the *thymus gland* composed of two lobes: in the female, the *ovaria* are very much elongated; and the *clitoris* often so much so as to be mistaken for a penis; and in the male, the *testes*, are lodged on the psoæ muscles until the seventh month, after which they descend into the scrotum. The *bones* (except those of the ear) are partly cartilaginous at birth, and for some time afterwards.

Besides these, there are several peculiarities in the fœtus appertaining to the circulation of blood, viz.: the *two umbilical arteries and one vein*, before described: the *canalis venosus*, a vein which proceeds from the veins of the vena portæ, into the inferior vena cava: the *canalis arteriosus*, an artery arising from the pulmonary artery, and passing obliquely into the aorta: and an opening in the septum of the auricles, called the *foramen ovale*.

FŒTAL CIRCULATION.

The extremities of the umbilical vein, by bibulous orifices, take up blood from the maternal or cellular portion of the placenta, and convey it into the abdomen of the fœtus, through the umbilicus. On reaching the liver, the vein divides into two branches, one of which enters the vena portæ, and after circulating through the liver, finds its way into the inferior vena cava : the other division (the canalis venosus) passes straight forward to the cava. Thus the blood arrives at the right auricle of the heart, from which more than half of it is expelled, at each contraction, into the left auricle, through the foramen ovale; the remaining part of the blood being forced into the right ventricle, from which it is propelled into the pulmonary artery. In this there is the *canalis arteriosus*, through which the greatest portion of the blood is transmitted immediately into the aorta; a very little being left in the pulmonary artery to be conveyed on and returned by the pulmonary veins into the left auricle, and from thence to the left ventricle, where it mixes with the blood which had previously entered it through the foramen ovale. From the left ventricle it is urged by its contractions into the aorta, where combining with that which previously entered it by the canalis arteriosus, the whole mass is then distributed to the various parts of the body, to be reconveyed to the placenta by the two umbilical arteries, which arise from the internal iliacs.

GRAVID UTERUS.

In consequence of impregnation, the uterus receives increments of new matter in all its component parts. Thus the calibre of the blood vessels and lymphatics becomes enormously increased, so that at the full term of utero-gestation the parietes of the uterus are not thinner than when the organ is unimpregnated, though at this time it is very greatly augmented in bulk.

Not only does this viscus undergo so material an alteration in its bulk, but its form becomes changed from being pyriform to the shape of an egg, having its smallest extremity downwards.

After parturition, the depletion of the blood vessels; the increased size and activity of the absorbents; and the contractility of the muscular fibres rapidly diminish the bulk of the uterus, restoring it in a few weeks nearly to its original dimensions. During pregnancy, the uterus occupies the anterior part of the abdomen, having the abdominal viscera behind it, by which arrangement pressure on the blood vessels which run close to the spine is prevented, and the viscera themselves are equally preserved by the bending forward of the fundus uteri.

EVIDENCES OF PREGNANCY.

Some women pass through the whole term of utero-gestation with but little or no disturbance of the constitution; but in general in addition to suppression of the

menstrual secretion, there are other symptoms of pregnancy, which contribute to establish the fact.

Suppressio mensium is one of the first and most common proofs of impregnation; but as this may result from disease, it, exclusively, cannot be relied on.

Irritability of body and mind, in consequence of the intimate sympathy subsisting between the uterus and every other part of the system, is another presumptive evidence. This irritability is evidenced by disturbed sleep, febrile excitement, nausea, vomiting, dyspepsia, and peevishness.

Enlargement of the mammæ usually accompanies pregnancy, and is combined with lancinating pains through these glands; and whitish serum is often secreted. But this symptom, with pain and augmentation of size, will sometimes occur with any disease of the uterus.

Darkened and enlarged areola is said to be the best individual proof; but to establish the fact, much judgment and experience are necessary.

Quickening, or the first perception of the fœtus in utero, is referable to the sudden starting of the uterus above the brim of the pelvis; and to the pressure of that organ on the iliac vessels being suddenly taken off, in consequence of which the blood rushes below, and a temporary exhaustion of the vessels of the brain follows: therefore it is, that women often faint on this occurrence taking place. Quickening usually occurs at the end of

the fourth calendar month, or eighteenth week, and presents demonstrative evidence of the certainty of utero-gestation; and although it is sometimes mistaken for the movements of intestinal gas, yet a medical man can hardly be mistaken.

Enlargement of the abdomen is not of itself to be relied on, because it may result from diseased abdominal viscera, or from an accumulation of fluid in its cavity.

The gravid uterus rises in the abdomen in a ratio corresponding to the period of pregnancy, and in a woman, the parietes of whose abdomen may be thin, at the end of the

third month, it may be felt just at the brim of the pelvis. At the close of the

fourth month, it rises above the brim; and during the

fifth month, it is about midway between the superior aperture of the pelvis and umbilicus. In the

sixth month, the upper edge of the fundus uteri is a little below the umbilicus; and at the

seventh month, just above it. During the

eighth month, it is equidistant between the umbilicus and scorbiculus cordis, and at the commencement of the

ninth month, it extends to the scorbiculus cordis, after which it usually subsides to where it was between the seventh and eighth months.

But in *corpulent* women, examination, externally, communicates very little information; and therefore it is, that it becomes essential to institute an enquiry per

vaginam, to ascertain the condition of the os and cervix uteri.

During the first *four* months of pregnancy, the mouth of the womb is found closely shut up by firm coagulable lymph. The neck is somewhat increased in size, and is thrown rather backwards. Otherwise, the cervix uteri is unaltered in length until the *fifth* month, when it begins to shorten and expand, so that it loses half an inch; and during the *seventh* month, another half inch is lost; and at the end of the *eighth* month it disappears, leaving the circumference of the os much thicker than before, to be expanded during the *ninth* month.

Of course all these calculations vary very much.

Thus it appears, that the existence of pregnancy can only be determined by the concurrence of several symptoms.

DURATION OF PREGNANCY.

Although most modern accoucheurs think that a woman rarely carries a child in utero longer than *forty weeks*, or *nine calendar months*, there is too much evidence to be rejected in support of the opinion that utero-gestation does sometimes proceed to the term of from forty to forty-five weeks.

A legitimate and rational conclusion, from the mass of authenticated evidence on this subject, appears to be: that the process of utero-gestation *usually* requires forty weeks for its completion; but circumstances may occur

to retard the perfection of this process, so that the child when born, shall not exceed the ordinary size; whilst on the other hand it must be admitted, that sometimes the process is prematurely completed, so that a perfect child of the usual size shall be expelled two or three weeks before the termination of the ninth month.

Utero-gestation is generally computed either from a single coitus; from a fortnight subsequent to the last menstrual secretion; or from the time of quickening. In either of the two first methods of calculating, *forty* weeks are allowed: in the last about *twenty-two* weeks.

PHŒNOMENA OF UTERO-GESTATION.

If women lived less unnaturally, pregnancy and parturition would be attended by fewer of those painful symptoms which usually harass them in civilized society.

During the term of utero-gestation, the diet should be moderately nutritious, and easy of digestion. All stimulants should be prohibited, because the vascular and nervous systems are already too highly excited.

Regular and moderate exercise on foot should be enjoined; and there should be a careful avoidance of all violent bodily exertion, and of all powerful mental emotion; for occurrences which produce no disturbance in the constitution of an unimpregnated woman, very sensibly affect one whose mental and physical powers are rendered irritable by utero-gestation.

The *diseases and inconveniences* of the pregnant

state, may be traced either to, *irritability of the nervous, and a plethoric condition of the vascular, systems;* or to *mechanical pressure on contiguous organs by the gravid uterus.*

Of the earliest and most distressing attendants on utero-gestation, are *nausea* and *vomiting.*

These troublesome complaints, harass women most on their first rising from an horizontal position in bed, and sometimes recur frequently through the day. Very frequently nausea and vomiting disappear soon after quickening; but with some women, they continue through every stage of pregnancy.

Treatment.

Medical interference is rarely necessary. Should this condition of the stomach be a source of much distress, a *blister*, or *leeches*, or *cupping glasses*, applied to the pit of the stomach, will often afford relief. *Saline aperients*, in moderate doses, taken daily before rising, are useful. *Calumba* in infusion, or some other vegetable bitter, taken with an acid and alkali, in a state of effervescence, is beneficial. Should the symptoms be very urgent, so as to endanger the support of the woman, the stomach must be kept in a state of absolute rest, and nourishment must be exhibited by the absorbents of the skin and intestinal canal. *Opium*, to the extent of two grains for a dose, with the same quantity of *capsicum*, is sometimes very efficacious when the stomach is singularly

irritable, and the constitution much enfeebled. Now and then, *premature labour*, artificially effected, is essential to the safety of such women.

Cardialgia, is often a very troublesome affection of the stomach. This sensation of heat in the throat and fauces with frequent eructations of acrid gastric secretion, requires the exhibition of such medicines, as will carry off the excessive quantity, and correct the morbid quality of the fluid thrown up into the mouth. To secure these objects, *magnesia*, *liquor potassæ*, *liquor ammoniæ*, *vegetable bitters*, *&c.* are usually employed with advantage.

Pain in the head, with many other symptoms occurring within the first few months of pregnancy, are referable to vascular congestion, owing to the constitution not being reconciled to the plethora consequent on the cessation of the menstrual secretion; so that, until the balance in the circulation is established, it is necessary to deplete the system by the steady use of laxatives, and by having occasional recourse to general and local bleeding.

The necessity for these remedial means, exist very commonly in women who begin to bear children late in life; as well as in such as are of low thick stature, with short necks. Such women should be bled at about the fifth and eighth months, by which means puerperal convulsions, may sometimes be averted.

A variety of complaints, which depend on *nervous irritability* and *vascular excitement*, are apt to occur,

and which require the same management as when existing under other circumstances.

To *mechanical pressure* of the gravid uterus, on contiguous viscera may be referred

Hœmorrhoids, a disease of frequent occurrence during utero-gestation, in consequence of interruption to the free return of blood to the vena portæ by the hœmorrhoidal veins, often producing distension, and demanding attention.

Treatment.

First, to unload the bowels by mild aperients, such as the potassæ supertartras, oleum ricini, confectio sennæ, sulphur præcipitatum, &c. *Secondly*, to subdue inflammation and pain, by lessening the bulk of the distended hœmorrhoidal vessels, by leeches; puncturing the tumified veins; by a poultice composed of oat or linseed meal, and the decoctum papaveris; and *thirdly*, to restore the vessels to their original condition by cold enemata and astringent applications.

Should the tumours be a source of much vexation, so as to threaten uterine irritation and contraction, they may be safely removed by the scalpel, or by a clean cutting pair of scissors.

Constipation, is a very common attendant on pregnancy, and originates in torpor of the bowels, or in pressure of the gravid uterus.

This condition of the intestinal canal might be in a great degree obviated, by the regular use of ripe subacid

fruits, vegetables, and moderate and daily exercise. Should pharmaceutical interference be necessary, the following formula is very well adapted to overcome the affection.

R. Extracti colocynthidis compositi, dr: i.
Extracti hyoscyami, gr. xxiv.

contunde bene simul ut fiat massa in pilulas xxiv fingenda: quarum, alvo adstricta, capiat duas vel tres decubitum iturus.

The daily exhibition of a common enema, as is so commonly resorted to on the Continent, would be preferable to the prevalent and pernicious custom in this country, of stimulating the bowels to action, by a daily recurrence to purgative medicines.

Sometimes the rectum so completely loses its tone, as to become enormously distended with hardened feculent matter, so as to require its contents to be broken down and washed out by some mechanical contrivance.

Severe cutting pain in the direction of the linea innominata, is occasionally produced by the gravid uterus resting on this edge of bone, when more acute than usual.

Treatment.

Horizontal posture on the back, and the nice adaptation of a soft oblong pad to the pendulous abdomen, supported by a bandage passed over the shoulders.

Irritation of the neck of the bladder, connected with an inability to walk; the sensations attendant on proci-

dentia uteri, ardor urinæ, and sometimes retention, with a considerable yellowish mucous discharge; now and then harass women in the early months of pregnancy, but often disappear as the uterus rises and gets above the pelvis.

Treatment.

Recumbent posture, mild, and unirritating aperients: particularly oleum ricini, cum mucilagine acaciæ: diminished quantity of fluid, and that of the blandest quality. Should retention of urine and inflammation of the neck of the bladder supervene, the employment of the catheter and lancet must be had recourse to.

Petechiæ, vibices, and ecchymosis, sometimes result from some of the cuticular vessels of the abdomen giving way from distension; this discoloration and cracking of the skin, often alarms timid women very unnecessarily.

Treatment.

Gentle friction and a recumbent posture. Should exudation of serum from the cuticular cracks be distressing, the parieties of the abdomen may be sponged several times daily, with thin water gruel, or tepid water.

Varices of the lower extremities occur during the latter months of utero-gestation, and sometimes give way, and occasion considerable hœmorrhage.

Treatment.

Unless the superincumbent pressure of the gravid uterus could be removed, the treatment must be palliative; but the turgescence of the vessels may be dimin-

ished by an elastic and well applied roller; by aperients; by abstemious living; and by keeping the lower extremities as much as possible in a horizontal position. Should circumstances justify it, a ligature might be applied above and below the most diseased part of the vein.

Œdema of the labia pudendi, or even of the whole body, now and then occurs towards the close of pregnancy, in consequence of the refluent blood being interrupted in its course by pressure.

Treatment.

Only palliative: by aperients; moderate friction; regular but gentle exercise; and when at rest, a recumbent posture should be enforced. When the labia only are œdematous, warm fomentations of decoctum papaveris, will afford relief. Should the skin be enormously distended, a few slight punctures may be made into the cellular substance, but they are better avoided.

RETROVERSIO UTERI

Is that displacement of the uterus which occasionally takes place between the third and fourth months of pregnancy, before the uterus has escaped above the superior aperture of the pelvis. It consists in the fundus uteri (which should incline upwards) being thrown downwards below the promontory of the sacrum, and pressing on the rectum; whilst the os and cervix uteri are forced upwards and forwards, either against or over the symphisis pubis, and most commonly attended with constipation, tenesmus, and retention of urine.

Cause.

An overdistended state of the bladder which presses down the rectum, and from its connexion with the uterus at its neck, naturally elevates that organ as it rises in the abdomen. This is the most common, but not the only cause of this malposition of the uterus; which though perhaps never dissociated from distended bladder, may nevertheless be produced by powerful mental emotions, provided the uterus, either by impregnation or disease, be enlarged to about the size it attains between the third and fourth month of utero-gestation.

Treatment.

The regular employment of the catheter is the principal means of cure. The bladder must be emptied twice daily, until the uterus by its growth rises above the pelvis. The catheter should be small, flat, and curved considerably more than under ordinary circumstances, and sometimes a male flexible one will be required. The distorted course of the urethra must be borne in mind, which will point out the necessity for depressing the handle considerably, during the introduction of the instrument; and not unfrequently, it will be necessary to introduce two fingers into the vagina, so as to depress the cervix uteri.

The bowels should be kept open by glysters; and absolute rest, in a recumbent posture, should be enjoined. Under this management, the uterus usually recovers itself in a few days, without it being necessary to restore

restore the organ to its original situation by any other manual interference.

But it may be impracticable to withdraw the urine, and it then becomes necessary to replace the uterus, or the bladder may slough or burst, or adhesive inflammation may ensue. The woman being on her hands and knees, the fore and middle fingers of the accoucheur's left hand, well anointed, are to be gently passed up the rectum to the fundus of the uterus, which they are to elevate, whilst the cervix uteri is at the same time to be carefully depressed by two fingers of the right hand in the vagina. Should the fingers employed to elevate the fundus uteri not be long enough to effect this object, a piece of whalebone may be substituted, having a small piece of sponge attached to one extremity, as a pad.

In some few melancholy instances, the uterus has been firmly wedged into the pelvis by adhesive inflammation. Such cases have terminated fatally; nor is it probable that the result would have been more favourable had a trocar been passed through the uterus, to discharge the liquor amnii, or had the symphisis pubis been divided, in compliance with the recommendation of some respectable men. In one case, the bladder was tapped above the pubes: the uterus was subsequently reduced, and the woman did well.

In several patients, the uterus has remained partially retroverted to the full period of utero-gestation, of course without an entire retention of urine and fæces. During

parturition, after severe and protracted sufferings, the os uteri has descended, and the child has been expelled, in a few of these cases: in the other, the patients died undelivered.

ABORTION.

The premature separation and expulsion of the *ovum* from the uterus is termed abortion, or miscarriage, when it occurs before the fœtus is able to carry on the functions of vitality, independent of its connexion with the uterus.

Symptoms.

Uterine hemorrhage, either with or without flakes of decidua; with intermitting pain.

These symptoms are usually preceded by several premonitory ones, which are too fallacious to be relied on; such as, lancinating pains in the breast, followed by flaccidity; cessation of the morning sickness; rigors; coldness of the lower part of the abdomen; and sometimes there is offensive discharge from the uterus.

Predisposing Causes.

Irritable, and feeble condition of the uterus, not admitting of distention beyond a certain extent: and premature development of the os uteri.

Exciting Causes.

All such as enfeeble the uterus, or destroy the life of the ovum, so as to interfere with the progress of utero-gestation; such as, general febrile excitement; plethora; diseased rectum or bladder; powerful mental emotions; violent exertion, such as dancing, riding, &c.; emetics;

purgatives; fatigue; rapid and excessive accumulation of liquor amnii; syphilitic taint, &c.

Prognosis.

This should always be guarded; because, although the immediate consequences of abortion be not alarming, it often debilitates the system, and lays the foundation of obstinate chronic disease of the uterus. The immediate danger depends very much on the quantity of hæmorrhage, which is usually more formidable in the latter than in the early months of pregnancy.

Treatment.

Those remedial means which bear on the *predisposing causes*, embrace a sedulous avoidance of all those circumstances which produce local and constitutional irritability, congestion, or debility; with the steady employment of means to subdue such a condition of things when existent.

If there be *debility and irritability*, recourse must be had to sea air and cold bathing; the daily use of the bidet; cold water injections per vaginam or per anum; with the exhibition of vegetable tonics, or mineral acids, internally: sexual separation should be enjoined; and a recumbent posture enforced for some weeks before and after the usual term of abortion: with abstinence from fermented liquors.

In the majority of cases there is *local congestion* demanding topical bleeding, by leeches or by cupping

from the loins, perineum, or groin; and in such cases, dry diet* should be insisted on. Women disposed to abort, should never be present in a lying-in room during parturition, or, as is common with quadrupeds, they may expel the contents of the uterus, from sympathy.

Should a syphilitic taint be suspected to exist in either parent, a mercurial course for some weeks should be adopted.

A second class of means are applicable to the symptoms which threaten the immediate detachment and expulsion of the ovum, and *the prcinipal indication is to prevent uterine action*, for if this be established, abortion can but rarely be prevented.

It is at this point, that the progress of the mischief may be often arrested, by moderating the force and diminishing the frequency of the action of the heart, by local and general bleeding; by injecting per anum, three or four grains of opium, previously rubbed down with cold water; by absolute quietude of mind and repose of body in an horizontal posture; by light covering; cool air; cold injections per anum et per vaginam; and by the exhibition of nitras potassæ, in

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* It may be here observed, once for every occasion in which it is employed, that the term *dry diet* means *the avoidance of fluids*, as far as is practicable. Instead of the ordinary diet, ripe subacid or dried fruit, should be substituted, and that quantity of solids and fluids likely to produce *plethora ad molem*, must be abstained from.

doses of ten grains, in any cold fluid, every two hours, until it nauseates.

Should uterine action commence, abortion almost inevitably follows. Bnt even now, most of the means just enumerated must be persevered in, with a view to counteract the bad effects of severe and protracted pain and hemorrhage. *Opium* should not be given unless with the intention of temporarily subduing the contractile efforts; which if feeble, may be arrested for a time, so that when they recur, it may be with that degree of augmented power which is necessary to expel the ovum.

Stimuli can scarcely ever be necessary.

If the woman's life be endangered by hemorrhage, then extraordinary measures may be requisite; such as dashing cold water on the abdomen; the introduction of ice within the vagina; and the exhibition of lead internally, in the following form and quantity:

R. Plumbi superacetatis, g^r ij
Gummi opii $g_r \frac{1}{4}$

fiat pilula omni hora danda, si res postulent, donec pilulæ sex dentur.

Lead is a much more valuable, efficient, safe, and manageable medecine, than is generally supposed.

Sometimes the hemorrhage is kept up by some portion of the ovum remaining partly within and partly without the uterus. Should circumstances demand it, this may be removed by careful manual interference with a pair of curved dressing forceps.

Premature separation and expulsion of the ovum is said to occur more frequently at the sixth and tenth weeks, and at the third and seventh months. Women disposed to abort, should therefore more sedulously avoid the exciting causes of abortion at those dates of utero-gestation.

Parturition

Is that natural process occuring at the expiration of forty weeks from conception, by which the uterus detaches and expels its contents, and returns nearly to the condition in which it was previous to impregnation.

Cause.

The mature ovum coming in contact with, and stimulating the developed os uteri.

CLASSIFICATION OF LABOURS.

All existing arrangements are defective, if submitted to the test of nosological correctness.

The division of labours originally made by Hippocrates into

First, natural ;

Secondly, preternatural

is sufficiently comprehensive, whilst it forcibly recommends itself by its simplicity and perspicuity.

NATURAL LABOUR supposes four things.

First, that the vertex presents.

Secondly, that there is sufficient room in the pelvis to admit of the ready descent of the head of the child in that direction which permits the occiput to emerge under the arch of the pubis.

Thirdly, that there is parturient energy adequate to the expulsion of the contents of the uterus without manual interference, and without danger either to the mother or child ; and

Fourthly, that the process of parturition is completed within a moderate time.

PRETERNATURAL LABOUR embraces all the varieties not comprehended in the class of natural labour, whether they respect *difficulty*, *duration*, or *danger*, and may be included in the following six orders.

First, protracted labours.

Second, Those labours in which any other part than the head may present; such as the breach, feet, hands, funis, &c.

Third, labours with a plurality of children.

Fourth, labours attended with convulsions.

Fifth, labours with uterine hemorrhage.

Sixth, labours in which laceration of the uterus or contiguous parts may occur.

STAGES OF LABOUR.

Certain phœnomena occur during the progress of parturition which may be arranged under three divisions or stages.

The *first*, comprehends all that may occur before the complete dilatation of the os uteri.

The *second*, includes all that takes place between the developement of the os uteri and the expulsion of the child.

The *third*, embraces every thing connected with the detachment and extension of the placenta and its adherent membranes.

GENERAL OBSERVATIONS,

Equally applicable to natural and preternatural Labours.

Sometimes circumstances of so much moment occur, in the earliest stage of labour, that a practitioner should never long defer his visit, after being summoned to a parturient woman; or the sudden expulsion of the child through a capacious pelvis, which always excites alarm, and may invert the uterus; or formidable and even fatal hemorrhage may have demanded his immediate and active interposition. Besides, to a female who at this time is the subject of suffering and fear, it is consolatory to know that her medical attendant is acquainted with her state; and although it is the duty of the nurse to prepare (or as it is technically called, *guard* the bed) and also to change the dress of her mistress, still it can never be derogatory from the dignity of an accoucheur to see that every thing likely to conduce to the comfort and safety of his patient is arranged, previous to the accession of those active symptoms which more decidedly characterize labour.

Independent of these, which may be considered unimportant considerations, it is highly necessary that very early, the accoucheur should make himself acquainted with the presenting part of the child, and with its position in relation to the circumference of the pelvis, because it often happens, that this inquiry at the commencement of

parturition, detects some malposition of the head which must be rectified, or some other part presenting, which may require his immediate and active interference; consequently, he should always be in possession of this acquaintance with the actual state of things, by what is termed, *examination*, or among women, *taking a pain*, from the popular opinion, that by the act some relief is given to the patient.

This *examination per vaginam* is usually proposed too abruptly and made too rudely. Delicate women revolt at the idea of this proceeding, and therefore its necessity, and the advantages to be obtained from it, should always be explained to them. The proposal should be made to the nurse, or some friend, and the medical man should be out of the room whilst the patient lays herself at the foot of the bed, on her left side, having her knees bent upwards, in a line with the abdomen, pressing her feet against the bed post.

Unless the parts are well lubricated by mucous secretion, the index and middle fingers of the left hand are to be anointed with oil, or lard, and carried up to the os externum, the situation of which may usually be determined by the hips. They should be introduced at the posterior part of the vagina, and with moderate pressure be steadily carried forward to the os uteri, into which the point of the middle finger may be introduced. Thus far the proceeding should be carried during a paroxysm of pain; but until the pain ceases, nothing further is to be

done, except very cautiously, to ascertain the degree of expulsatory power exerted by the uterus, or the membranes may be lacerated, and the liquor amnii escape.

On the cessation of uterine contraction, the finger is to be carried on, and the presenting part and its position, with the condition of the os uteri, must be known before the fingers are withdrawn.

The woman and her friends always expect some part of the information thus obtained; and whilst the uncertainty of the *duration* of labour should always guard us against giving an opinion on that point, we are bound to communicate any favourable intelligence for their encouragement.

Having satisfactorily ascertained what he wished to know, the practitioner should withdraw, lest his patient should be induced to retain the contents of the bladder and rectum too long.

The state of these two viscera should be ascertained from the nurse, and if requisite, the bowels should be opened by an enema.

The patient may be permitted to take any plain food, but should not be allowed any stimulants. Such refreshment as ripe subacid fruits, may be liberally granted.

Her spirits should be kept up by kind and cheerful conversation, and she should be encouraged to walk about the room during the first stage of labour; and every effort should be made to divert her thoughts from her suffering.

She should not be urged to make any voluntary exertions to expedite the progress of parturition; but the entire process should be left as much as it can be to nature.

The lying-in room ought to be as cool and well ventilated as possible, and more than two persons, besides the patient and her accoucheur, are generally worse than useless.

SYMPTOMS PRECEDING LABOUR.

For some days previous to the accession of those phenomena which characterize the existence of labour, there are often present certain premonitory symptoms, which, by women who have borne children, are viewed as precursors of that eventful hour which they so much dread.

Restlessness, particularly at night, very frequently precedes parturition for days and weeks, and is rarely to be considered as bearing unfavourably on labour.

Subsidence of the uterus and abdomen is not an unusual monitor of the approach of suffering. It may be viewed in a favourable light, inasmuch as it indicates room in the pelvis.

Glairy mucous secretion from the os uteri and vagina, popularly termed *shew*, sometimes occurs for days before the more active symptoms of labour. It is often streaked with blood, and tends to lubricate the parts concerned in parturition.

Irritability of the bladder and rectum demanding

their frequent relief, is another occasional precursor of labour.

SYMPTOMS ACCOMPANYING LABOUR.

In consequence of the resistance which the uterus meets with during its contractile efforts, *pain* follows every such contraction; but the pain attendant on parturition differs very materially in its nature and in its influence on the uterus. These paroxysms of pain are either

Intestinal, or
Uterine.

Paroxysms of intestinal pain, or such as are termed false or spurious pains, may be distinguished from genuine labour pains, by being unconnected with uterine contraction; by attacking different parts of the abdomen; and by recurring irregularly.

These pains usually originate in some source of intestinal irritation, and may almost always be removed by emptying the bowels, and subsequently exhibiting an opiate. They can hardly be confounded with enteritis by an observant practitioner.

The uterine pains are either *dilating* or *expulsive*.

Dilating pains, or as they are popularly termed, *grinding* pains, result from uterine contraction. They are principally confined to the back, and occur in the earliest stage of labour, and are often peculiarly distressing to the patient, who expresses her suffering by restlessness, despondency, and moaning. They often continue a long time without the intermissions being free from uneasiness,

and appear almost exclusively to dilate the os uteri, having little or no influence over the fundus of the uterus.

It is during the existence of these dilating pains that *rigors* most commonly occur, and may be relieved by avoiding spiced or fermented fluid, and by giving any simple warm diluents.

When the mouth of the womb is considerably dilated, *expulsive pains*, sometimes termed, *forcing* or *bearing down* pains, commence in the loins, and gradually proceed round the abdomen, till they meet at the region of the pubes, and dart down the labia pudendi and thighs.

If the accoucheur's hand be placed on the flaccid parietes of the abdomen, previous to the accession of a paroxysm of expulsive pain, before the woman is aware of it, the uterus may be felt contracting to a hard, tense, incompressible tumour.

These pains observe regular intervals of ease, which become shorter, whilst the pains, in an inverse ratio, increase in their duration and severity; and now it is that the abdominal muscles and diaphragm afford their assistance.

During each propelling effort, a larger portion of the membranes, distended with liquor amnii, is forced through the os uteri, performing to it and all the parts through which the child has to pass, the office of an easy but powerful wedge. With these pains there is

often present a frequent disposition to empty the rectum ; and sometimes this is so harassing as to justify the administration of a small enema, with half a drachm of tincture of opium.

Vomiting is a common attendant on uterine pain, and is beneficial by rejecting food, which from its quantity or quality may be a source of inconvenience to the stomach.

It principally occurs during the dilating pains, and unquestionably assists in the relaxation and dilatation of the os uteri.

When vomiting continues or returns, in a protracted labour, after the mouth of the womb is fully dilated, with abdominal tension and pain, without uterine contractions, and with ejection from the stomach of fluid like dark coffee grounds, with foul tongue, and rapid and hard pulse, it generally must be viewed as indicative of inflammatory action, and as requiring immediate and most efficient interference.

Besides these attendants on parturition, the pulse usually becomes quickened and full ; the countenance florid; the whole surface of the body covered with profuse perspiration ; and the lower extremities cramped.

NATURAL LABOUR.

The process of natural labour is at once so simple and so beautiful, that it cannot fail to excite the admiration of those who look beneath the surface of the operations of nature.

It would be useless to repeat what has been advanced respecting the precursory and accompanying symptoms of parturition, although it is necessary to recal those statements to mind as constituting a part of the history of natural labour*.

The premonitory symptoms having continued for an indefinite time, pains in the loins darting through the pelvis, with an appearance of *shew*, indicate the approach of less unequivocal evidences of the commencement of parturition. For some time, these pains are of the *dilating* kind; and on an examination per vaginam, will be found rather to be diminishing the thickness of the cervix uteri than to be opening the mouth of the womb. When the cervix uteri becomes reduced to the thickness of the other parts of that organ, it begins to open, and as soon as it can admit the extrusion of any portion of the membranes distended with liquor amnii, the pains become rather of the *expulsive* character, and there will be a sensible bearing down of the whole uterine

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* Vide Pages 61 and 62.

tumour. Successive paroxysms of pain dilate the os uteri more and more, whilst the protruded membranes, distended like a tense bladder, fill up the opening, and perform the office of an inimitable wedge, till the uterus and vagina form one continuous passage. Soon after this, the membranes generally burst during a strong pain, having previously contributed to the dilatation of the vagina; and with the escape of the liquor amnii, there is sometimes a temporary suspension of pain, and the head of the child falls into the superior aperture or brim of the pelvis, or descends into the cavity; but more frequently, this advance is not made until several pains have followed this occurrence.

Uterine contractions recurring with augmented frequency, and force, gradually propel the fœtus along the passages until the head presses on the perineum, which is put on the full stretch; and also against the soft parts which it protrudes. These by degrees dilate, and permit the occiput to emerge under the arch of the pubis, and with the complete extrusion of the head, the other parts of the body are expelled sometimes by the same pain, but more frequently by one which speedily follows.

Now and then, the same paroxysm of pain detaches and expels the *placenta;* but more commonly, the uterus remains at rest for about *a quarter* of an hour, when it resumes its contractions, and throws off the placenta, with its adherent membranes.

This constitutes the interesting process of natural

labour, in which the uterus requires no officious interference; but which, when forced to submit to, she often resents, by harassing the busy meddler with some untoward occurrence.

Several important *changes in the relative situation of parts*, which well deserve attention and admiration, occur during this beautifully simple process.

At the commencement of labour, the head is found at the *brim* of the pelvis, having its long axis adapted to the longest diameter of the pelvis; or in other words, with the forehead and occiput opposed to the sacro-iliac symphisis and opposite acetabulum; the forehead being usually directed to the *right* sacro-iliac symphisis, and the occiput to the *left* acetabulum*.

It descends into the *cavity* of the pelvis, without undergoing any very material change in the relation which it bears to the circumference of the pelvis, except that the forehead is directed a little more backward towards the hollow of the sacrum†. Its further descent without some change of the position, is resisted by *three* obstacles.

First; by the sacro-ischiatic ligaments; *secondly*, by the spinous processes of the ischia; and *thirdly*, by the position of the shoulders, which are opposed to the shortest diameter of the brim of the pelvis, that is, to the promontory of the sacrum and symphisis pubis.

If the form of the spinous processes of the ischia be

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* Vide Plate 1. † Vide Plate 2.

recollected, it will be evident that the occiput having a tendency to turn forwards by the position of the head, on its descent into the cavity of the pelvis, will be assisted in effecting this course by the unequal pressure of the processes of the ischia on the sides of the head; for whilst one spinous process presses on the edge of the parietal bone next the forehead, the other is pressing on that edge of the opposite bone which is nearest the occiput; so that the apex of the occipital cone necessarily passes under the arch of the pubes.

This being accomplished, the long axis of the head of the fœtus corresponds with the longest diameter of the *outlet* of the pelvis; whilst the same change applies the long axis of the shoulders to the widest part of the brim, which enter without any difficulty.*

On the emergence of the occiput in the form of a cone, (an admirable contrivance, gradually to open the soft parts) the chin recedes from the chest, and the occiput turns up towards the abdomen of the mother, so that the chin and occiput describe a curved line during the gradual exit of the head from the vagina.

At this stage of the process, another change takes place; because the shoulders having entered the cavity of the pelvis nearly in the same direction, as they passed the brim, meet with the obstacles that the head encountered; and from similar causes, effect the same turn

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* Vide Plate 3.

during which the body of the fœtus takes a new direction, so that the face becomes turned from the sacrum to one or other of the thighs, generally to the right, and the shoulders to the sacrum and pubes, thus allowing them to pass with ease by their longest diameter, through the outlet of the pelvis in its longest direction.

Thus far it is evident, that the accoucheur has little or nothing to do by manual interference, except indeed, to support the perineum by his hand covered smoothly with a soft napkin, and so applied as to give equable support, without resisting in the slightest degree, the exit of the head.

In natural labour, no other interference is justifiable, and too strong terms cannot be employed to reprobate the practice of hastening the birth of the body by dragging it forcibly by the head into the world. It should be left to be expelled by the unaided contractions of the uterus.

As soon as the child manifests unequivocal signs of life, a ligature composed either of a piece of tape, or of a few threads, may be passed round the funis about two inches distant from the umbilicus, and a second ligature at the distance of three inches from the first. The funis may then be divided by a round pointed pair of scissors, at a point equidistant from each ligature ; taking care that nothing but the funis be included in the incision. All this should be done under the bed clothes, it being indelicate and unnecessary to expose either mother or child.

Having transferred the child to the nurse, the bandage which was previously passed round the abdomen of the mother should be moderately tightened, or the uterus should be supported by gentle pressure made by an assistant, which will be found very materially to aid its efforts to detach and expel the placenta.

The management of the placenta constitutes a very important part of natural labour, and if the uterus be not permitted to empty itself gradually and perfectly, some untoward and alarming circumstance may occur in this stage of parturition.

Generally, from *fifteen* to *thirty* minutes elapse between the birth and the expulsion of the placenta. The woman then complains of a slight pain in her back, or abdomen, and this secondary contraction of the uterus detaches the placenta, although it but rarely expels it from the passages; whence it may usually be removed by coiling the funis round two of the fingers of the right hand, whilst guided by the cord the thumb and index finger of the left hand should always be passed up to its insertion into the placenta, which if it can be felt is a pretty sure indication of the detachment of the whole mass from the parietes of the uterus. By this measure, also, the funis is prevented from breaking off, and a firmer hold of the placenta is obtained.

To guard against the possibility of inversion of the uterus occurring without knowing it, the placenta should be permitted to slip by the fingers of the left hand in

vagina, and the withdrawment of the placental mass should always be in the axis of the brim, cavity, and outlet of the pelvis, as it passes those parts.

The hand of the accoucheur should afterwards be laid on the abdomen, to ascertain that the uterus is well contracted; and the pulse should be felt, lest internal hemorrhage redistending the uterus, may be going on to the endangering of the patient's life.

It is of great moment that a bandage be fixed over the uterine region; this being done, and a well aired napkin applied to the labia pudendi, some mild cool nourishment may be given to the woman, who after remaining tranquil for half an hour, should have her soiled linen withdrawn, and without being raised from her horizontal posture on any pretence, may be drawn up to the head of the bed; she being *passive* during the operation, lest hemorhage, or prolapsus uteri should follow.

DETENTION OF THE PLACENTA

is referable to one or other of the following causes.

First, diminution, or loss of contractile power in the uterus.

Secondly, irregular contraction.

Thirdly, adhesion between the uterus and placenta.

First. Should the placenta be retained in utero as a consequence of *diminution* or *loss of contractile power* in that organ, when the uterus has become exhausted by protracted exertions, on an external examination of the ab-

domen, it will be found uncontracted; and instead of communicating to the hand the sensation of a hard ball in the region of the pubes, it will be found large and loose, occupying no inconsiderable part of the cavity of the abdomen. Under these circumstances, no man in his senses would think of *forcibly* extracting the placenta by pulling at the funis, as he would most likely invert the uterus; or should he succeed in detaching the mass from its connexion with the uterus, the large uncontracted orifices of the uterine vessels must inevitably pour out streams of blood, and the woman most likely will fall a victim to the temerity and ignorance of her medical attendant.

The management of this case resolves itself exclusively into the *production of uterine contraction.*

This object is to be accomplished by *external* and *internal* means.

The *former* are, the steady employment of pressure on the abdomen with a bandage, or by the hands of an assistant; grasping the uterus within the palm of the hand; briskly rubbing the loins and uterine region; and dashing the abdomen with cold water. The *internal* means to be employed are, the introduction of the hand within the cavity of the uterus, in which it is to be cautiously moved about until by its contractile efforts, it expels the hand and placenta; and the injection of cold water in utero.

A *second* cause of retention of the placenta, is, *irregular contraction* of the uterus. This spasmodic affection

of its muscular fibres may affect either the longitudinal or circular ones, but it is most frequently the latter that take on spasmodic action, either at the cervix uteri, which it closes, or about the middle, dividing the uterus into two chambers, constituting the *hour-glass* contraction.

It has been before directed never to draw down by the funis, unless its insertion into the substance of the placenta can be distinctly felt and grasped; and in this case the importance of the direction is obvious, because the inevitable consequence of pulling by the cord will be, its separation, by which the difficulty of removing it will be augmented.

The *management* of this case consists in *subduing the spasmodic constriction;* and this is to be accomplished by the exhibition of a full dose of opium, not less than *forty* or *fifty minims* of tincture of opium, or from *two to three grains* of the solid gum. Usually within half an hour of its administration, the constricted part becomes *dilatable*, and may be overcome by the cautious introduction of the hand into the uterus through the stricture.

The *third* cause of detention of the placenta constitutes one of the most formidable and trying cases in obstetric practice. It arises from *adhesion between* the uterus and placenta, in consequence of the deposition of coagulable lymph from inflammatory action, which may have existed during utero-gestation.

This adhesion is not often found to unite the whole

surface of the placenta to the uterus, consequently, a part is loosened, and hemorrhage, with a resilition of the cord on the cessation of secondary pains, excites suspicion of the state of things, and leads to an examination per vaginam.

Management.

The unaided efforts of the uterus can never detach and expel the placenta under these circumstances; and consequently, the hand of the accoucheur guided by the funis, must be very carefully introduced into the uterus and an attempt must be made to detach the placenta by drawing its circumference to the centre of the mass.

Should this effort be unsuccessful, one or two fingers may be very cautiously insinuated between the edge of the placenta and uterus, which must be slowly and tenderly separated. The hand should never be withdrawn, until the object is completely effected, and uterine contractions excited.

It is of great importance to remove every portion of the placenta, or hectic fever and inflammation of the uterus may supervene, and destroy the woman.

PRETERNATURAL LABOURS.

Under this class will be contemplated the following six orders.

First. Protracted labours.

Second. Those labours in which any other part than the head may present; such as the breach, feet, hands, funis, &c.

Third. Labours with a plurality of children.

Fourth. Labours attended with convulsions.

Fifth. Labours with uterine hemorrhage.

Sixth. Labours in which laceration of the uterus or contiguous parts may occur.

First Order.

PROTRACTED LABOUR.

The term *protracted* includes all such labours as by different authors are called, *laborious, lingering, difficult, perilous, impracticable, tedious, perplexing, instrumental,* and various other names, as tiresome as they are useless.

Causes and Management.

All protracted labours are referable to *defective parturient power,* or to *preternatural resistance;* but a less general investigation of them must be entered into under *two divisions.*

First. Such labours as are brought to a favourable termination by the unaided powers of the uterus.

Secondly. Such labours as require instrumental aid.

Within the whole range of obstetric science, there is nothing which so much distinguishes the judicious practitioner from the man who disgraces medicine, as the management of *protracted labours.* One man, by incessant meddling, produces rigidity of parts, and even inflames the os uteri so that his patient through his folly shall suffer from a most painful and protracted labour.

Another, officiously interferes with the beautifully simple and admirably adapted process of nature; and presumes that by rupturing the membranes as soon as he can detect them, or by using his lever on lever principles, by which many women are rendered wretched for life, he shall accelerate parturition.

A third, urges his patient to be constantly taking stimulents, such as wine and spirits; or to employ voluntary exertion, under the *cant terms* of holding in her breath and forcing down; whilst the os uteri is not dilated half enough to permit the head to be forced through, and the consequence is that the woman becomes so exhausted by useless exertions, that she at last has not power enough to expel the child, and instruments must be had recourse to.

Another practitioner allows the head to remain through hours and days of laborious parturition in a position which will never permit it to pass through the pelvis,

until the mother is worn out by fruitless efforts; though the malposition might have been rectified at the commencement of labour without difficulty.

A fifth, is altogether unconcerned about the condition of parts, until the head has been so long, and so firmly wedged in the superior aperture of the pelvis, that mortification follows.

To complete this mournful series of portraits, every one of which is drawn from a living character, *another*, instead of waiting for uterine action to throw of the placenta, will pull at the funis as at a cart rope, until the uterus is inverted, or formidable hemorrhage follows; and when, as a consequence of his meddling, the uterus is filled with coagulated blood, and it strives to empty itself by strong contractions, which are called after pains, he willstrive to counteract the salutary operation, by exhibiting large doses of opium to quiet these pains, which are intended to repair the mischief he had himself produced. These sketches have not one shade too deep, and they are but a sample of those practical evils, which are of almost every day occurrence.

Unexpected circumstances very often occur in the practice of midwifery, in which a little mechanical dexterity will materially tend to shorten the duration, and mitigate the severity of suffering. This is so often seen, that an accoucheur will find an acquaintance with mechanical principles of no inconsiderable importance.

Firmness of mind, and unbending steadiness of pur-

pose, are essential to the comfortable and successful management of protracted labour.

An accoucheur must always maintain a calm and unruffled temper, and that well conditioned state of mind, which will prepare him for the occurrence of unexpected and alarming difficulties.

Whilst the patient and her friends are all bustle, consternation and despair, his countenance and manner must never express alarm or want of resource, under the most trying and adverse events. His knowledge should be so well arranged, and his plans in such a state of readiness, as to admit of their immediate application. Every now and then he will be so circumstanced and overtaken by such occurrences, that he dare not defer action until a second opinion is obtained: but he must at once determine on a plan, and adopt and pursue it with prompt and active decision. Neither his hand or his heart must for a moment lose their firmness; but with a mind unassailed by fear or doubt, he must accomplish his purpose with calmness and steadiness. On the occurrence of formidable difficulties or imminent danger, his coolness and calm consideration should at once be engaged on behalf of his patient; and with an increase of peril, there should always be an increase of self-possession on his part; but all this should be founded on knowledge and judgment, and not on ignorance and presumption; for confidence and decision are as frequently the offspring of the latter as of the former.

In such different degrees do medical men possess these important qualifications, that one will retain the confidence of his patient during a protracted labour of many days, whilst another by his timid countenance, and vaccillating conduct, will lose her confidence in as many hours.

But there is another feature of mind without which an accoucheur is essentially deficient. It is, *kindness of manner.*

He must indeed be destitute of the ordinary ingredients of humanity who feels not for a woman agonizing before him in paroxysms of pain, which appear intolerable and seem to threaten the extinction of life.

It is true that he will often be so jaded and harassed by mental inquietude and bodily fatigue, that the maintenance of a cheerful countenance is almost impracticable; but nothing can justify peevishness or insensibility, or indifference to the sufferings of his patient. On the contrary, tenderness and delicacy of manner, gentleness of voice, and whatever can soothe agitation and fear, or alleviate pain, however trifling the means, must never be neglected.

Such a character is viewed as a ministering angel, bringing with him the richest cordial of life; whilst an opposite being is contemplated with horror, as worse than a monster.

But to advert to the various causes of protracted labours of the *first division.*

Feeble or irregular uterine action will protract labour. Any circumstance debilitating the constitution, or the uterus only, will produce this condition of parts.

Parturition protracted from this cause, usually occupies a long time; during which, it is of the greatest moment to *support the powers of the system, and husband the strength*, by mild, unirritating, nutritious diet, and by kind and sympathising conduct: no voluntary exertions, or forcibly straining, should be permitted: the room ought to be cool and well ventilated; every encouragement to repose should be given; and uterine action must be increased, by steadily employed *friction* of the abdomen and loins; with moderate pressure on the uterine region. A pint of tepid water, or gruel, with a handful of salt, as an *enema*, will sometimes increase the uterine energies. *Opium* is a very efficient remedy for this cause of protracted labour. It should be given either by the mouth or rectum, not in such a quantity as to paralyze the uterine energy, but in a dose of about twenty minims of the tincture, or a grain of the gum, to procure sleep, and suspend irregular or inert contractions of the uterus, so that on their recurrence, they usually act with redoubled energies.

Plethora, as indicated by the calibre of the vessels, or by the force or frequency of the circulation, will sometimes produce this feeble and partial action of the uterus.

The detraction of a few ounces of blood will accelerate the progress of labour retarded by this cause.

An *excessive quantity of liquor amnii*, by overdistending the uterus, will enfeeble or paralyze its contractile power. Should this cause be *very obvious*, the membranes may be punctured by a probe or quill, or scratched by the finger nail, but the necessity for this *very rarely* occurs, and can scarcely ever be necessary until the membranes distended with fluid, have fully performed their office of dilating the os uteri and passages to the os externum.

Prematurely discharging the liquor amnii cannot be too seduously avoided; for among the most wearisome and trying cases of protracted labour, both to the accoucheur and patient, those which follow this occurrence must be classed; consequently a practitioner should not rashly interfere in these cases, or he may expect his temerity to be attended with augmented sufferings to his patient, inasmuch as the os uteri and vagina must be slowly dilated by some hard and irregular part of the child, instead of the soft wedge formed by the membranes filled with their secretion.

When this circumstance occurs, from some accidental cause in the earliest stage of labour, the process is always protracted, and the woman must submit to an incessant dribbling of the liquor amnii, without obtaining any relief from manual interference.

Children under these circumstances are not unfrequently expelled dead.

Rigidity of the os and cervix uteri gives rise to a very

protracted labour. With this condition of parts, if the finger be carried within the os uteri it feels smooth and unyielding, and whenever this sensation is communicated to the finger on examination, considerable time will elapse before the mouth of the womb dilates; and if assistance be not given, after suffering through days and nights, the os uteri will remain close, and thick, and hard.

The *management* of these cases requires considerable discretion, and although *time* will usually terminate them, yet the dilatation may be materially accelerated by the *abstraction of blood* in quantity to be regulated by the powers of the woman. This being done, the bowels should be freely opened by an aperient, exhibited by the mouth, and by a large emollient glyster.

After these measures have been adopted, a few ounces of tepid water or gruel, with from *one to two drachms* of *tincture of opium*, should be thrown into the rectum; or the os uteri may have gently rubbed into it, about *half a drachm of the extract of belladona*. By these means, relaxation is often speedily secured.

In addition, the patient's mind may be amused by sitting over steam; by having large emollient enemas frequently exhibited; and by fomentations to the uterine region.

Stimulants, fatigue, exertion, and a hot close room, must be studiously avoided; and her mind should be kept calm by every attention and kind assurance that can be given her, so that her hope and confidence may not fail.

Nothing can justify the very common and absurd practice of urging a patient under these circumstances, to *hold in her breath and force down*, whilst the os uteri is undilated and rigid.

Should the *membranes be unusually rigid and thick*, so as to protract labour after they have fulfilled their office of dilatation, the only remedy is cautiously to lacerate them.

When *rigidity of the external parts* interfere with the expulsion of the child, time must be given, fomentations employed, and lard liberally introduced within the vagina; great care must be taken of the *perineum*, which should be steadily supported, or not only the fourchette, but the entire skin between rectum and vagina, may be lacerated, and the woman rendered miserable for life.

Œdema of the cervix uteri is another cause of protracted labour; and one which, if not well managed, sometimes proves very tedious. The cervix becomes either in part or wholly thickened and puffy, communicating the sensation of a roll of dough. This state is produced by pressure of the head of the child obstructing the circulation.

Relief is to be afforded by *cautiously elevating the fundus uteri*, and by *dilating and supporting the os uteri*.

During a paroxysm of pain an assistant may gently elevate the fundus uteri by a broad bandage applied round the abdomen, whilst the accoucheur very carefully

supports and dilates the œdematous cervix uteri with his expanded fingers in the vagina.

By these means the os uteri will slip back over the head of the child.

Artificial dilatation of the cervix uteri must never be persevered in, if the neck of the womb be acutely sensible. When the cervix uteri is œdematous and extremely painful, the loss of blood will be highly beneficial; especially if, as is sometimes the case, the threatening symptoms of convulsions be present.

Descent of the os uteri before the head of the child lengthens the duration of labour, because the expulsive efforts of the uterus cannot be so completely expended on the mouth of the organ. This case must be managed very similarly to the last considered one.

Malposition of the uterus is very embarrassing to those who have not met with the occurrence.

If the os uteri be thrown *backwards* against the promontory of the sacrum, the labour is generally protracted. It principally happens to women with capacious pelves, and is not easily detected on the first examination.

Time will rectify this displacement, and the woman who is the subject of it should pass through parturition lying on her back.

If the os uteri be forced *forwards* against the symphysis pubis, or tilted over it with the fundus backwards, the case will probably prove to be, retroversion of the uterus continuing to the full period of gestation. This

is a particularly trying case, in which nothing but time and patience can effect any thing*.

Powerful mental emotions, whether of a painful or pleasing nature, materially influence uterine contractions, which they will not only diminish, but altogether suspend; consequently, the mind of a woman in labour should be kept as free from sudden and strong affections as possible.

Distention of the bladder has in many instances prevented the uterus, diaphragm, and abdomen muscles from exerting their full power on the uterine contents; and several cases are on record of such criminal negligence as has permitted this viscus to burst. When this cause operates to protract labour, the catheter must be introduced, and *in all cases of protracted labour*, the state of the bladder should be inquired into every few hours.

Preternatural shortness of the funis, either *actual*, or from *entanglement* about the extremities or neck of the fœtus, is a cause of protracted labour, for which very little can be done, and one which fortunately but rarely happens.

When there is reason to suspect its existence from unusual resilition of the head, just as it is about to enter the world, great care must be taken on the expulsion of

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*. Vide, on this subject, a very interesting pamphlet by Dr. Merriman, entitled, "A Dissertation on the Retroversion of the Womb, &c."

the body, to press the umbilicus of the child close to the os externum of the mother, to prevent the forcible detachment of the placenta, or inversion of the uterus, or separation of the navel string.

A pendulous abdomen, by hanging over the pubes, will protract labour. This occurrence happens to women who are very fat, and who have borne many children. Such a patient should lay on her back during parturition, and a bandage should be passed round the abdomen just tight enough to support it.

Anchylosis of the os coccygis to the sacrum is another cause for which no relief but that which *time* affords, can be given.

Unfavourable position of the presenting part will protract labour, particularly when the axis of the head or shoulders does not correspond to the diameter of the pelvis. Such malpositions will often be overcome by time, or they must be rectified by means to be hereafter pointed out.

Want of room, either from disproportionate size of the head and other cavities from water; or from air, by putrefaction; or from tumours of different kinds encroaching on the capacity of the pelvis; or hernia of the bladder, intestine or omentum; will interfere with labour.

Should the impediment in these cases be trifling and compressible, powerful parturient efforts may overcome it; but if it be large or incompressible, the case may require the forceps, scalpel, or perforator. No invariable

directions for the management of these cases can be given, because it must depend on the consistence, size, and situation of the obstruction. Sometimes these tumours may be elevated and kept above the brim of the pelvis, until the presenting part occupies the superior aperture; and others of them may be safely punctured*.

Various other causes of protracted labours, of the division now under consideration, are mentioned by writers, such as cribrated hymen; contraction of the vagina, either congenital, or the result of disease, &c.; but these are of very rare occurrence, and are usually overcome by the unaided powers of the uterus; if not, the *scalpel* must be used, taking the greatest care to divide only the obstructing part.

Second Division

of protracted labours, or such as require *instrumental aid* for their completion.

GENERAL OBSERVATIONS.

To determine on the necessity for instrumental interference, is one of the nicest points in the practice of midwifery; for whilst the unnecessary employment of instruments, (which has sacrificed many a woman and child at the shrine of impatience and ignorance) cannot be too strongly reprobated, still no conduct ought to

* Much interesting and important information on these points is to be found in a variety of publications, and particularly in the 2d, 3d, and 10th volumes of the Medico-Chirurgical Transactions.

be more deprecated than that timid and cruel mismanagement, which permits an interesting female to struggle under fruitless efforts, till she sinks exhausted from such exertions, or is not delivered until irreparable mischief is done to the soft parts; in consequence of which, she may linger out a wretched existence for a few weeks or months; the victim, of criminal procrastination.

To assist in forming an opinion on this momentous question, some such circumstances as the following may be noticed, before proceeding to *particular cases*.

Should labour from any cause have proceeded until parturient action becomes so feeble as to be inadequate to expel the uterine contents, or should the pains have altogether ceased, then artificial aid is often justifiable.

The *cessation or diminution of pain* referred to, is the consequence of original debility; or of an exhausted condition of the uterus from long continued and fruitless contractile exertions; and must be distinguished from that *occasional and temporary suspension of uterine efforts*, which is not associated with any other unfavourable symptom, and which may often be removed by repose, nourishment, and abdominal and lumbar friction. Under these circumstances, *time* may be given, provided there be a little steady progress, the presenting part be loose in the pelvis; the vagina cool, and clothed with secretion; the mind tranquil; the powers of the system not exhausted; and the rectum and bladder capable of emptying themselves.

But on the other hand, should the *pains* have been for many hours *strong* and *expulsive ;* should the presenting part be firmly *wedged in the pelvis*, interrupting the functions of the bladder and rectum ; surely common sense dictates that timely assistance should be given to prevent exhaustion or sloughing.

Whenever then this state of things exists, with fever ; restlessness ; head-ache ; vomiting ; (the os uteri being fully dilated) mental inquietude ; abdominal tenderness, with heat, and dryness, and pain about the vagina and os uteri ; unless delivery be effected, low muttering, delirium ; feeble, rapid, and intermitting pulse ; with cold clammy perspiration, will soon terminate the heart-rending scene.

The instruments most approved of in modern practice are

First, such as do not necessarily destroy either mother or child ; and these are the

Short Forceps,
Lever or Vectis,
Blunt Hook,
Fillet, and
Long Forceps ; and

Secondly, such as when used involve the destruction of one or the other ; and these are the

Perforator,
Craniotomy, or Teeth Forceps,
Crotchet, and
Scalpel.

Previous to the use of instruments, some GENERAL OBSERVATIONS, which are equally applicable to each of them, may be usefully made.

First. The bladder and rectum should, if possible, always be emptied: the former by the introduction of the catheter; and the latter by the exhibition of an enema.

Secondly. Instruments should never be introduced whilst the os uteri remains firm and undilated, or irreparable mischief may ensue. The perineum should also be in a yielding condition.

Thirdly. The assistance given by instruments should always be afforded during pain, that the uterus may be merely assisted in its exertions, and that it may be gradually emptied. Of course, if uterine contractions have ceased, all that can be done in this respect is to imitate nature by employing power with intervals of rest.

Except under very peculiar circumstances, such as may occur in cases of hemorrhage, syncope, &c. the power employed should be rather steady than quick; and if it secure perceptible advance of the child, however little the progress may be, it should be considered as satisfactory.

Fourthly. Instruments should always be introduced slowly and cautiously.

Fifthly. The patient may generally be in the usual position, on her left side.

Sixthly. The instruments ought to be brought as

nearly as possible to the temperature of the body, and well anointed, before being used.

Seventhly. Unless very urgent circumstances prohibit, the employment of instruments should not be concealed from the patient and her friends.

Eighthly. The extracting power should be employed in the direction of the axis of the pelvis ; so that if the obstacle be at the brim, the handle of the instrument must be directed backwards against the coccyx ; but as the child advances, that part of the instrument grasped by the operator's hand should be gradually directed towards the pubes.

Ninthly. Should the instrument, when used, give much pain, we may rest assured that some part of the mother is included in the grasp, and should immediately change the hold.

Tenthly. The time to be occupied in effecting delivery will depend on the degree of difficulty to be overcome.

OF THE SHORT FORCEPS.*

This instrument is a double lever, so constructed that the fulcrum of each blade is in the handle of the other.

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* An invaluable little work, entitled "APHORISMS on the Application and Use of the *Forceps* and *Vectis*," by Thomas Denman, M. D. should be in the hands, and impressed on the memory, of every practitioner in midwifery.

The forceps exhibited in the engraving*, differ somewhat from those in ordinary use in several important particulars.

The *fenestræ* are so wide† as to admit the protuberances of the parietal bones to pass through them, by which two very important objects are secured.

The first is, a *diminution of bulk*, because the alæ of the blades lay along the sides of the parietal bones, instead of adding to the size of the head, by being directly on, or over them, as is inevitable with Smellie's and all similar constructed forceps, the alæ of which approximate too closely to permit any part of the cranium to pass through the fenestræ: in consequence of which, the difficulty of parturition (presuming it to consist in disproportion between the head and the pelvis) is materially augmented: and, *secondly*, instead of having the hard unyielding metal opposed to the soft parts of the mother, by which their safety is endangered, the prominences of the parietal bones passing through the fenestræ, when

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* Vide Plate 12.

† We are indebted to Dr. Haighton for this very important improvement in the short forceps: and this acknowledgment affords me peculiar pleasure, because it is impossible to mention the name of that truly respectable man without expressing sentiments of the highest respect for his character. But it will be perceived that the forceps in the appended engraving have much narrower shoulders, and are less in all their dimensions (except in their length), than those known as Dr. Haighton's.

the forceps are well applied, will be in contact with the vagina; by which, it is obvious, there is much less probability of its sustaining injury, than from the blades of the forceps in ordinary use.

A second distinguishing feature of these short forceps is the curvature of the intermediate part between the blade and the handle, and which is intended to save the perineum from pressure and laceration. It is familiar to every practical man, that in many cases which require the employment of the forceps there is great danger of the perineum being torn, notwithstanding the utmost precaution on the part of the practitioner. Particularly in that case in which the occiput, instead of being opposed to the symphysis pubis, is found descending along the hollow of the sacrum, (or in other words, the face inclined to the pubes); and this, it need scarcely be observed, is one of the most common causes of protracted parturition, demanding the aid of the forceps, presuming that the malposition of the head has been omitted to be rectified in the early stage of labour. If, in this malposition of parts, the forceps are well applied, the points will be directed forwards to the pubis, and the handles backwards towards the rectum, endangering, by pressure, the safety of the perineum. Now, the simple contrivance of a curvature in the shanks fully meets this serious evil, independent of the permission which it gives to the handles to be carried much further back than they could otherwise be, by which a firmer

and more favourable hold is obtained of the child's head; and for want of which, in many instances, the points of the blades, instead of being directed over the cheeks and towards the chin, pass on, and even wound the neck of the infant. This one illustration must suffice, though others might be adduced in confirmation of the correctness of the preceding observations*.

The last, although very far from the *least* peculiarity in these forceps, to which reference will be made, is the construction of the handle of the blade, which is usually applied last and uppermost.

It is only necessary to appeal to any one who has introduced forceps, with their convex surfaces opposed to the sides of the pelvis, the ears of the child being in their most natural situation, or from side to side†, and such an one will at once acknowledge that extreme difficulty often presents itself to the introduction of the upper blade, in consequence of the bed and mattress below preventing that depression of the handle which is essential to the elevation of the point of the blade, to carry it over the vertex. Indeed, the accomplishment of this object is almost impracticable, without changing the position of the woman, or introducing the blade in the hollow of the sacrum, and afterwards bringing it over the cheek. But there is a decided objection to either of these alternatives, because women, during labour, always attach importance

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* Vide Plate 5. † As in Plate 4.

to the most trifling departure from the ordinary mode of proceeding, so that the mere proposal of turning them on their backs, (which, by the by, is a disgusting and indelicate position, because the woman must stare her accoucheur in the face) or even the act of bringing the nates over the edge of the bed, usually excites considerable apprehension; otherwise, either of these changes would meet the difficulty.

With respect to the other alternative, or the introduction of the upper blade by the circuitous course of the sacrum. This expedient is often impracticable, and always difficult, because the concavity of this bone may be so completely filled up with the head of the child, as not to allow of the requisite movement of the instrument, without the employment of an injudicious degree of power. Accoucheurs, alive to this circumstance, have long since had their levers made with reflecting or moveable handles; and it is the latter expedient that suggested the simple contrivance of a moveable handle, by a screw, which is clearly exhibited in the engraving; and there can be now no difficulty in introducing the upper blade of the short forceps directly over the vertex, without changing the position of the patient. After the blade is fixed, of course the handle is to be screwed on, and the instrument used as any other.

DIRECTIONS FOR APPLYING THE FORCEPS.

1. The *short* forceps are to be applied to the sides of the head of the child, so that the ears and protuberances of the parietal bones shall be within the fenestræ, aud the locking part consequently either at the vertex or face.

2. They cannot be advantageously employed, unless an ear of the child can be distinctly felt; (taking care not to mistake for it any portion of the uterus) and, except in cases of syncope from hemorrhage, it is scarcely ever necessary to use this instrument, until the ear has been distinctly felt for several hours.

3. The half to be first applied is that with the fixed handle, and it should be held in the left hand, that the fore finger of the right hand may be at liberty to guide the point of the blade to its destination. The other blade is to be unscrewed from the handle, and being held in the right hand is to be applied in an opposite line corresponding to the course of the first blade, the parts being prepared by the fore finger of the left hand, whilst the third and little finger are employed in retaining the first introduced blade in its place. The handle is then to be screwed on.

4. When the point of the blade comes in contact with the ear, the handle should be depressed, so that the point shall rise over the obstruction, and immediately again elevated, so that the extremity may be kept in

contact with the side of the head, and the risk of passing it without the os uteri be avoided.

5. Before the locking can be effected, it is often necessary to withdraw a little way, one, or both blades, and when they are brought together, great care is necessary not to include any part of the mother; for even a single hair locked in will give pain.

6. Should the extremities of the handles closely approximate, or be very distant from each other when applied, it will generally be found, that the application is not such as will retain its hold.

7. When fixed, the handles may be tied together by a piece of tape, but not so tightly as to compress the head;—compression should be employed only during a pain, when extractive power is used.

8. When power is used, it should be from blade to blade, combining moderate traction with the lateral motion.

If these directions are followed, in connexion with the observations made in the 90th page, there will be but little difficulty in successfully employing the forceps in particular cases to which they are applicable.

OF THE LEVER OR VECTIS.

These pages being purely practical, prohibit any lengthened discussion on the comparative value of the lever and short forceps.

Some persons have lavished the highest encomium on the one instrument, and equally eminent men have bestowed the most unqualified approbation on the other. As in most disputed points, "*media quodammodo inter diversas sententias*" will hold good; for under some circumstances, the lever is doubtless preferable to the forceps, whilst the latter will probably, by the candid enquirer, be admitted to be, on the whole, by far the most useful instrument.

The lever or vectis is a very powerful, and, consequently, a very dangerous instrument, if it be used on lever principles, acting on the soft parts of the woman as the fulcrum. In the hands of men who have not viewed and employed it rather as a *hook* than a *lever*, it has done incalculable mischief.

The lever may be employed, subject to very much the same regulations as the forceps, only that it can be used earlier, and may be applied to any part of the head.

PARTICULAR CASES REQUIRING THE USE OF THE SHORT FORCEPS OR LEVER.

First. Presentations of the *vertex*, and

Secondly. Presentations of the *face*, *forehead*, and *ear*.

VERTEX PRESENTATIONS.

Three cases will be sufficient to illustrate all the minor varieties of *position* of the head in this *presentation*.

1. The ears may be opposed to the sides of the pelvis with the *occiput to the symphisis pubis*.* This, it will be recollected, is the most favourable position; but exhaustion, hemorrhage, convulsions, want of room, and other circumstances, may justify the employment of the forceps.

In this position of the head, the first blade should be applied below, its concavity corresponding with the convexity of the head, the extremity of the blade being directed backwards towards the promontory of the sacrum, consequently the handle will be pointing forwards. The second blade being fixed by the right hand, in a corresponding direction above, compliance with the directions and rules already laid down, will enable the accoucheur to conduct this case to a favourable termination.

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* Vide Plate 4.

2. The ears may be in the same relation to the circumference of the pelvis as in the former case, with the *occiput in the hollow of the sacrum**.

In this position of the head, *first*, the presenting part will not be so conical towards the symphisis pubis; *secondly*, the bones of the cranium will not so readily overlap each other; and *thirdly*, the largest and anterior or quadrangular fontanelle will be felt towards the pubes, with the sagital suture running backwards to the sacrum.

Such being the relation of parts, and the bones of the face being unyielding, the labour is protracted, because the whole of the head must enter the pelvis before any part can emerge from under the symphisis pubis.

Should the pelvis be capacious, and the *vis a tergo* powerful, the face may be forced out under the arch of the pubis, after keeping the perineum so much on the stretch as to endanger its laceration, unless it be steadily supported by the accoucheur.

If the native powers of the uterus are inadequate to the expulsion of the head in this direction, an attempt may be made to turn the face into the hollow of the sacrum, by steadily pressing during pain against the opposite frontal and parietal bones with the fore fingers of both hands, that if the head be not firmly fixed, it may be so

* Vide Plate 5.

changed in its position that the occiput can be brought round to the pubes.*

But this object cannot always be attained, and it is then necessary to attempt to accomplish the same thing by the forceps; and if the operator is foiled, or is unable to succeed without the employment of immoderate force, the atttempt must be abandoned and the head brought down without changing its position. In this case, the points of the blades must be directed towards the pubes, and the handles consequently towards the os coccygis; and this is one of those cases in which the great advantage of the curvature in the shank is obvious, for without it, there must be inevitably that degree of pressure on the perineum which would greatly risk its safety. As the head descends, the perineum must be supported, and the handles gradually drawn towards the arch of the pubes.

Considerable time should be given under these circumstances; for it is surely the least evil to permit the woman to endure a little extra pain, if the result be the safety of the perineum.

3. The ears are sometimes opposed to the symphisis

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* *Dr. Smellie* first recommended this plan, which was subsequently more fully brought before the profession by *Dr. John Clarke*, in a very instructive paper, published in the second volume of the "*Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge.*

pubis and hollow of the sacrum, having the *occiput and face opposed to the sides of the pelvis,* the head having descended into the cavity.*

In this case, the long diameter of the head is in a line with the shortest diameter of the outlet, consequently the sacro-ischiatic ligaments, and the spinous processes of the ischia, and the situation of the shoulders at the brim, prevent its advancement.

Under these circumstances, an attempt should be made to turn the head *half round* with the fingers as suggested in the last considered presentation ; and if the fingers be inadequate to that quantum of effort which may be necessary, the forceps must be substituted to effect the same object.

Very often when this *half-turn* is made (which should be always so effected, as to bring the face into the hollow of the sacrum), the difficulty being overcome, nature will terminate the labour. Should she not, the forceps should be used as in the first supposed case ; or that in which the occiput is opposed to the symphisis pubis, with the ears to the sides of the pelvis.

In this case, the first blade of the forceps must be applied between the head and pubes, and the other blade in the hollow of the sacrum, instead of above and below, taking care not to injure the soft parts in contact with the bones of the pubes.

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* Vide Plate 6.

FACE PRESENTATIONS.

In these protracted and awkward cases, in which the eyes, nose, or mouth is discovered on examination, if the strength of the patient be well managed, and time be given, the difficulty arising from the length and inequality of the presenting part, will most frequently be overcome by the uterine efforts, without manual interference.

On the other hand, if rashness and rudeness be substituted for patience, much mischief may be done; for with the greatest care the face of the child will be often frightfully swollen and black, and the perineum of the mother lacerated.

In these cases, retention of urine is generally a source of distress, and requires the occasional introduction of the catheter.

As in vertex presentations *three positions*, of the face will be noticed, the management of which will embrace all the unimportant varieties.

1. *The chin may be opposed to the pubes*, and this is the most usual and favourable situation in which it can be placed.

Although the labour may be very protracted, if the contractile efforts of the uterus be powerful, this case is generally terminated without the necessity for instrumental aid; and it is highly important to observe, that when nature accomplishes the delivery, *the chin emerges*

from under the arch of the pubes, before the expulsion of the forehead and vertex.

Should the uterine energy not be adequate to the completion of the labour, assistance is to be given, either first, if the resistance be trifling, by disengaging the forehead and chin, so as to convert it into a vertex case, by steadily pressing the face upwards and sideways, with a semi-rotatory motion during pain, so that the occipito-vertex shall be placed against the sacro-iliac symphisis; or, secondly, if the case be discovered *early*, the *lever* may be most advantageously used as a *hook* fixed on the occiput which it is to depress, whilst the face is gently raised by the fingers. This method of managing such cases refers exclusively to them when *discovered early*, and when *the resistance is inconsiderable:* but thirdly, if the face be low down, and firmly wedged in the pelvis, then the process adopted by nature must be imitated, and with the *lever fixed over the side of the face*, the chin must be made first to emerge; or the forceps may be applied as in a vertex case, only that the blades running in a line from the face to the occipito-vertex, will have their extremities at the occipito-vertex, and the locking part at the face*.

2. Should the *chin be opposed to either side of the pelvis*, if it be deemed requisite to employ the forceps,

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* Vide Plate 7.

care must be taken not to effect the *half-turn* too early; and still greater care should be observed to make the half-turn so as to bring the chin to the symphisis pubis.

3. In some rare instances, *the chin is opposed to the sacrum*, and the consequence generally is, the death of the child, from the duration and severity of the labour.

By an experienced man the head might be elevated, and its position rectified, if it be not firmly jammed into the pelvis; but more frequently it will be necessary to open the head by the perforator, and diminish its bulk, before delivery can be effected.

PRESENTATION OF THE FOREHEAD*.

This malposition of the head occasionally protracts and augments the sufferings of women so much as to require the employment of the *lever*, which is to be fixed over the occiput, and during each paroxysm of pain by drawing down the back part of the head, and at the same time elevating the forehead, so as to cause a closer approximation of the chin to the chest, the termination of the case may be materially accelerated.

PRESENTATION OF THE EAR.

The cases on record in which the ear has presented are very few; and it cannot be difficult, if such presenta-

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* Vide Plate 8.

tions be discovered early, so to employ the lever, as very materially to improve the relative situation of parts.

This instrument is to be carried over the vertex laterally, and whilst traction is employed, during every parturient exertion, the base of the cranium is to be raised by two fingers.

OF THE LONG FORCEPS.

This invaluable instrument originally employed by Levret, and since somewhat modified and recommended by several respectable authors and lecturers, is but little known, and much less estimated, or it would be employed by accoucheurs as a most important substitute for the perforator and crotchet, in many of those cases in which children are now destroyed.

This instrument is principally applicable,

First, to those cases of deformity at the brim of the pelvis, in which the diminished capacity of the pelvis is from sacrum to pubes, and yet so slight, that a little power beyond what the uterus can employ, would expel living children, which are now almost universally sacrificed at the shrine of prejudice. It is applicable

Secondly, to those cases of hemorrhage, convulsions, &c. in which the head of the child is resting on the superior aperture of the pelvis, and in which delivery being essential to the well doing of the mother, is now usually effected by opening the head of the child.

The *long forceps* in contra-distinction to the *short ones* are to be applied over the occiput and face of the child, so that the convex edges of the blades may correspond to the concavity of the sacrum.

When used, the power may be exerted laterally, or from side to side, with moderate traction, remembering

that the axis of the brim of the pelvis requires the handles to be kept backwards towards the os coccygis, but as the head descends, its most favourable position in relation to the pelvis must be secured.

It has been extremely gratifying to *myself and to several highly esteemed friends*, to have been by this means, instrumental already in rescuing not a few children whose heads had been condemned to be opened.

Of the *first class* of instruments, or those the use of which is not incompatible with the safety of both mother and child, the BLUNT HOOK and FILLET remain to be noticed. These are instruments in very little use, and will be spoken of when those cases come under review to which they are applicable.

The *second class* of instruments are such as endanger or actually destroy the life of either mother or child; and the examination of them, will lead to the consideration of the best management of cases of extreme difficulty from *ossification of the bones of the cranium; distortion of its cavity by fluid;* or from DISTORTED or DEFORMED PELVIS, *by rachitis, by mollities ossium, or malacosteon*, and by *exostosis*. Under these circumstances, a woman must not die undelivered; nor should she be permitted to exhaust her powers by fruitless exertions, until inflammation and sloughing result from long continued pressure.

Four methods have been provided for the relief of these lamentable cases, one or other of which must be

adopted according to the peculiar circumstances of the individual case. These are,

First. The operation of *cephalatomia,* which consists in diminishing the size of the head of the child by the perforator.

Secondly. The Cæsarian operation.

Thirdly. The division of the symphysis pubis ; and

Fourthly. The production of parturition *prematurely.*

OF DIMINISHING THE BULK OF THE HEAD OF THE CHILD, BY THE OPERATION OF Cephalatomia.

The instruments employed in this operation are, the *perforator* which, as its name implies, opens the head and breaks down its contents ; the *crotchet,* or sharp pointed hook, to extract the cranium ; or as a substitute for the crotchet, the *craniotomy forceps**.

Of the craniotomy forceps, as the competitor of the crotchet, something more must be said. The venerable lecturer on midwifery at Guy's Hospital (Dr. Haighton), has for many years been in the habit of exhibiting a pair of lithotomy forceps, a little altered, and which he represents as a very valuable substitute for the crotchet, in some cases of difficulty in parturition, arising from the impaction of the cranium at the superior aperture of the pelvis, after the operation of cephalatomia had been performed. Fourteen years back it forcibly struck me, that these forceps, somewhat modified, possessed all the

* Vide Plate 12.

advantages of the crotchet, without having appended to them any of those flagrant defects which fully justify the exclusion of that vile and dangerous instrument from obstetric practice, in all those cases which require the application of considerable extracting force to bring down the perforated cranium.

Midwifery is indebted to several continental writers for very similar suggestions; and gentlemen who have attended the lectures of Dr. Hamilton, of Edinburgh, must be familiar with Dr. Lyon's forceps, which are so strongly recommended by him. But it is to Dr. D. D. Davis that the profession is laid under the deepest obligations for the very great improvement which this instrument has attained under his direction. The progressive steps by which it arrived at its present improved construction are detailed in the eighth volume of the London Medical Repository, and the instrument itself, is exhibited in an engraving contained in the same volume. By comparing the craniotomy forceps there sketched with those represented in the engraving which accompanies these pages*, the mechanism of the two will be seen to be different, whilst their principle of action is the same. To the instrument exhibited in the plate preference is given merely on account of its simplicity, easy application, and adaptation at once to ordinary cases, and to such as require peculiar management.

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* Vide Plate 12.

Some such contrivance as this must, ere long, altogether supersede the crotchet, with every scientific practitioner; though for some little time it (the crotchet) may be continued in use, to the manifest danger of both patient and operator. That the craniotomy forceps will soon be generally substituted for the crotchet, is inferred from the following important data.

First, because with them the accoucheur may obtain so firm a purchase or hold of the fœtal cranium, as will enable him to rectify any thing that may be unfavourable in the position of the head; and also to regulate the degree of power which it may be necessary to employ for its extraction—two highly important advantages, which it is evident the crotchet can never confer.

Secondly, because with this instrument there is no danger of injuring the vagina, even should it slip from its hold, whilst considerable extracting power is being employed. On the contrary, not only is the crotchet much more likely to slip, but many most deplorable instances are recorded in which it has torn the soft parts of the mother, or lacerated the fingers of the accoucheur. And,

Lastly, because it is essential to the security of the vagina and contiguous organs, that whenever the crotchet is used, the precautionary measure of keeping a hand in the passage should always be had recourse to; a precaution extremely painful to the patient and practitioner, and one altogether needless when the craniotomy forceps are employed.

In estimating the dimensions of the pelvis, all pelvimeters but the fingers are ridiculous and useless; and it requires no little experience and judgment to determine correctly on the admeasurements of either of a preternaturally enlarged head, or of a deformed or distorted pelvis.

As nothing less than the *life* of the child is dependent on the opinion formed of these cases, the most satisfactory conviction of the necessity for the *perforator*, should be obtained; before its employment is determined on; and the concurrent sanction of a more experienced practitioner should, if possible, be always obtained.

The result of observations made by the most eminent accoucheurs is, that a full grown fœtus cannot pass through the superior aperture of the pelvis, if the distance between the *pubes* and the promontory of the *sacrum* be less than *two inches* and *three quarters;* but a medical man cannot be too deliberate in his decision on the impossibility of nature's adequacy to the expulsion of the child, particularly when it is remembered that many cases are recorded in which this operation was most needlessly performed, as was manifested by the facility with which the children were afterwards expelled, having had their heads so slightly wounded that they *lived* for several days after birth.

Without endangering the safety of the soft parts of the woman, reasonable time should therefore be granted to the powers of the mother, by which her mind will be

more satisfied on the expediency of the operation; the head will have descended lower in the pelvis; and the child may perhaps die.

Here it will be well to enumerate the symptoms of the *death of the child in utero*, premising the enumeration by stating, that most of those which are mentioned by authors as proofs, are extremely fallacious.

They are either such as present themselves *before*, or *during* parturition.

First. Those preceding labour are of a very dubious character, and must be viewed collectively, to supply any thing like conviction. They are,

Flaccidity of the mammæ.

The sensation of a cold weight about the uterine region.

Rigors, without local disease.

Want of motion in the child; with many other supposed proofs, not worth enumerating.

Secondly. Such symptoms as occur during labour, and these are either *demonstrative* or *presumptive*.

The *demonstrative* evidences are,

Great mobility of the bones of the cranium.

Emphysema of the scalp.

No pulsation in the funis; sanious and fœtid discharge from the uterus, with portions of cuticle.

The *presumptive* evidences are;

Cessation of the movements of the child.

Protraction of labour for several days.

Escape of the meconium—the head presenting.

Œdema of the scalp.

No one of these alleged proofs of the death of the child should be individually admitted; and without the concurrence of several of them, an opinion cannot be satisfactorily formed.

Should it be deliberately determined on to perform the operation of *cephalatomia*, the general rules must be regarded, before proceeding to diminish the bulk of the head.

The uterus and its contents should be kept *in situ*, by steady pressure made on the abdomen by an assistant, whilst the operator passes two fingers of his left hand per vaginam to the head of the child. Having fixed on a suture or fontanelle, the point of the perforator is to be carefully carried along the groove made by the approximation of the fingers to the part to be perforated, and through which by semirotatary or drilling motion it is to be forced into the skull, until its progress is arrested by the *shoulders* of the instrument. The handles must now be opened, and the instrument turned in different directions, so that the opening may be sufficiently enlarged to admit the perforator, with which the cerebral mass is to be well broken down.

Unless circumstances imperatively forbid, some hours may pass without any thing further being done, during which time uterine contractions will force out the contents of the cranium, so that the bulk of the head becomes

materially diminished, and the difficulty being overcome, the labour may be terminated by the unaided powers of the mother.

If this should not take place, by waiting a few hours, the tumefaction of the soft parts of the mother have time to subside, and the head will have descended more or less into the cavity of the pelvis.

The *craniotomy forceps* are now to be passed up the vagina, and on reaching the perforation, the handles are to be opened a little way, and the blade *without teeth* is to be introduced within the cranium so that the concavity of the shanks shall be opposed to the perineum. On closing the handles, the teeth transfix the bones of the head, which is to be extracted in the line of the axis of that part of the pelvis through which it is passing.

It is well only to co-operate with uterine efforts, and every attempt must be made to overcome any remaining obstacle by improving the situation of the head, and by the steady employment of extracting power.

The extraction of the body is to be effected as under other circumstances; and when the child is separated from its mother, the mangled head ought to be stuffed and sewed up neatly.

Sometimes, the mere adaptation of the shoulders to the longest diameter will not much facilitate their passage; and the obstruction may be so considerable as to justify assistance with the blunt hook fixed in the axilla.

In other instances, it becomes necessary cautiously to

perforate and remove the contents of the thorax and abdomen before the body can be extracted.

Should extreme difficulty exist in obtaining the passage of the head through the brim of the pelvis, the bones of the summit of the cranium and of the face must be removed *seriatim*, so that the base alone shall remain. The chin is then to be brought through first, by which means there will be rarely more than *an inch and a half* from the chin to the root of the nose to enter the pelvis.

Presentations of the face now and then demand perforation of the cranium to diminish its size. In these cases, the perforator should be introduced just above the nose, in the *sagital* suture.

When it becomes necessary to open the head, after *the lower extremities are expelled*, the perforation must be made *behind the ear*.

OF THE CÆSARIAN OPERATION.

This operation consists in making an incision through the parietes of the abdomen and uterus, sufficiently large to admit the introduction of the hand, and the extraction of the fœtus and placenta.

The cases demanding this formidable and so frequently fatal operation, will be admitted to be extremely rare, when it is affirmed, that several instances are authenticated by men of the highest integrity and eminence in their profession, in which children have been delivered after the perforator has been used, although the distance between *pubes* and *sacrum* did not exceed *one inch and a half*, and in which there did not appear to be more than *two inches* from one side of the pelvis to the other.

In *England* the operation has been performed somewhat less than *thirty* times in cases of protracted labour from rachitis or malacosteon. In every instance but *one** it terminated fatally. It has also been performed successfully *once* in *Ireland* with a razor, by an illiterate but bold female practitioner in midwifery†.

On the *Continent*, the operation has been abundantly more successful; for out of *two hundred* and *thirty* cases recorded by Monsieur Baudelocque, *one hundred and*

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* Vide Medical Records and Researches, Page 154.

† Vide Edinburgh Medical Essays, Vol. 1st, Article 37.

thirty-nine women recovered, and consequently only *ninety-one* died.

Perhaps the only satisfactory reason that can be assigned for the remarkable difference in the result of the operations performed in this country and on the Continent is, that it has scarcely ever been determined on in England until after long continued fruitless efforts have been made by the mother to expel the child, so that her constitutional powers, and the parts to be operated on, have been in the most unfavourable possible condition; whilst on the Continent an ecclesiastical law morally compels the patient to submit to, and the accoucheur to perform the operation, as soon as careful examination demonstrates the necessity*, whilst the constitution is tranquil, and its powers unimpaired.

The uterus may be opened for the extraction of the child, in some cases, *after the death of the mother;* for although it has not been ascertained how long vitality may be preserved by the fœtus in utero, after apparent extinction of the vital principle in the mother; yet several instances are given, on the best authority of the *Cæsarian section* having been performed after death appeared to have passed on the women for nearly half an hour, in which the children were saved.

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* A very well detailed, although unsuccessful case is given by *Mr Kinder Wood*, in the 8th volume of the Medico-Chirurgical Transactions, in which the various steps of the operation are explained.

THE DIVISION OF THE SYMPHYSIS PUBIS.

It is scarcely necessary to say any thing on this third method of relief, which was proposed by Monsieur Sigault in the year 1767, because the result of nearly *fifty* recorded cases was so disastrous, that the operation has been long since abandoned.

OF BRINGING ON LABOUR PREMATURELY.

The three methods of proceeding already adverted to, are in themselves so formidable, and so painful to a well constituted mind, that it must hail with the purest pleasure any proposal which promises to substitute for them a less objectionable mode of treating cases of extreme difficulty from disproportion of parts.

It had long heen noticed that some women who could not expel full grown children at the full period of utero-gestation, produced living children when from accidental circumstances, they aborted between the seventh and eighth month; and this admitted fact led to the introduction of that practice which brings on labour as soon as the child is capable of carrying on the functions of life independent of its mother.

The result of this operation hitherto has been, that out of nearly *one hundred cases* in which labour has been prematurely induced, about *one half* of the children who would otherwise have been inevitably destroyed by the perforator, have been born alive.

Before determining on the propriety of this measure, the necessity and the probable success of it should always be confirmed by a second practitioner of character and experience.

The measure cannot be necessary if the woman has previously borne a living child, unless disease has subsequently diminished the capacity of the pelvis.

It should never be adopted unless former labours have demonstrated most unequivocally, the impossibility of a full grown child being moulded to the passages and forced through them*.

The operation is performed by three different methods.

First. By gently carrying the fore finger of the left hand *per vaginam in uterum*, taking care to convey it cautiously through the os uteri to the membranes,—the woman standing up, and steadily forcing down the uterus, whilst the stilette of a catheter held in the right hand, and conducted along the finger of the left hand in utero is to be cautiously pressed through the membranes to let off the liquor amnii.

A conclusive objection to this mode of operating is the destruction of the child, which most frequently follows in consequence of the uterus being emptied of its fluid, and pressing on the defenceless fœtus.

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* Vide a very instructive paper on this subject, in the *Third Volume* of the Medico-Chirurgical Transactions, by Dr. Merriman.

Secondly. This plan has been improved and rendered less objectionable by the modification of carrying up the stilette some distance within the uterus before puncturing the membranes, so that the puncture coming in contact with the uterus (instead of being made opposite the os uteri as in the first proposal) the liquor amnii escapes so gradually that the child runs less risk of perishing by pressure.

But neither of these plans can bear comparison with the *third* method, which consists in merely passing the finger round and round within the os and cervix uteri, so as to detach the *decidua*.

By this mode, the membranes are left entire, so that the fœtus cannot be destroyed by pressure; and the mouth of the womb and vagina are gradually dilated by the protrusion of the liquor amnii performing its wedge-like office as in a natural labour.

Parturition usually commences in from *twenty-four* to *ninety-six* hours, and the management of the case must depend on whether it be natural or preternatural.

Second Order.

OF LABOURS, OR THOSE IN WHICH ANY OTHER PART THAN THE HEAD PRESENTS; SUCH AS THE *Feet*, *Breech*, *Hand*, *Funis*, *&c.*

Many varieties of this order of labours will terminate without any artificial assistance, and are therefore deemed

by some authors to be natural cases ; but the majority of writers and teachers consider all labours to be preternatural, in which the head is expelled last.

An accoucheur is led to suspect that the head is not the presenting part when the liquor amnii escapes without being followed by the descent of the fœtus ; and when the os uteri is considerably dilated without the child resting upon it.

But nothing short of that demonstrative evidence which the actual detection of the presenting part affords, can be conclusive.

It is of considerable moment to discover the presentation during the first stage of labour, because the varieties of this order of labour require very different management ; and this is one of many reasons why the practitioner should always examine the woman per vaginam at the commencement of parturition.

As labours in which the head is expelled last generally demand some kind of manual aid, it is important to bear in mind that that assistance should not be given until the mouth of the womb is fully dilated, or it may be lacerated ; and when interference is necessary, it should always be given with the greatest possible care and deliberation. Nor is it undeserving of notice, that when two extremities present, they should never be drawn down until it is ascertained that they both belong to the same child.

First. Of presentations of the *feet*.

This presentation occurs more frequently, and is more easily managed than any other presentation of the lower extremities.

The *foot* is known to present

First, by the shortness and evenness of the toes;

Secondly, by its thickness and shape;

Thirdly, by its heel*.

The feet may be very differently situated as they pass through the pelvis, and although *their* passage may be equally easy in either direction, the position in which they descend very materially influences the exit of the head and shoulders through the superior aperture of the pelvis.

The most favourable direction for the toes in their descent, is, pointing to one or other of the sacro-iliac symphyses, because the head is consequently placed with its long axis corresponding with the longest or diagonal diameter of the pelvis; and in its further descent naturally disposed to proceed with the face verging towards the hollow of the sacrum.

On the other hand, should the toes point to the vertebral column, or to the abdomen of the mother, the head in its descent will not enter the pelvis, because the long axis of the former does not correspond with the

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* I have in my museum two hands, in which the carpal bones are so bent as to cause these extremities to bear a very close resemblance to feet.

longest diameter of the latter, and the chin and occiput become hitched on the pubes and promontory of the sacrum; and it may hardly be practicable to disengage them from this very unfavourable position.

If then, the feet should come down in this untoward direction, it becomes necessary to rectify the malposition by firmly grasping the nates as soon as they have passed the os externum; and with prudent firmness during a pain, to give that inclination to the body which will direct the toes towards either sacro-iliac symphysis.

Considerable dissonance of opinion has existed on the management of the arms, which of course are extended by the sides of the head of the child. It is unnecessary to refer to the arguments which have been advanced by those who think they should always be brought down before the head, or by others who maintain the impropriety of removing them from their position.

Whenever the fingers of the accoucheur can without difficulty be passed along the body of the child, and over the shoulders to the bend of the elbows an attempt should be made to draw down the arms one after the other, by sweeping the hands of the child over its face, and in general this can be effected without the employment of immoderate force. Should the resistance be considerable, and the soft parts rigid, the attempt ought to be abandoned, because the benefit obtained by the extraction of the arms is by no means commensurate with any risk of injuring the mother.

When the body is expelled, and the head is filling up the superior aperture of the pelvis, there is great danger of the child losing its life by the pressure of the funis between the bones of the cranium and the pelvis; and therefore, if the passages be well dilated, the termination of the labour should now be accelerated by two fingers passed over the shoulders of the child, with which moderate and steady extracting power may be employed, whilst one finger of the other hand passed into the mouth, will have the double advantage of depressing the chin to the sternum, by which means the axis of the head may be diminished, and at the same time air may be admitted into the mouth and chest of the child, and its existence rendered less dependant on the circulation through the funis.

With this command of the head, also, any malposition may be rectified.

Should only *one foot* present, it is well to attempt to grasp the other; but very often, this is not easily done, nor is it of much importance, because, as it descends, a finger may be hitched in the groin, and the leg and thigh brought down.

The *knees* now and then constitute the presenting the part, but independent of this presentation being extremely rare, it demands no management different from a footling case.

Secondly. Of presentation of the *breech.*

Labours in which the nates occupy the brim of the

pelvis are generally extremely tedious, because these parts do not diminish in their size, or so readily accommodate themselves to the superior aperture as the bones of the head, and the uterus appears to act inefficiently.

The breech and head are not unfrequently confounded one with the other; for although the breech is usually softer than the head, yet both being round, considerable care is requisite to distinguish them.

This presentation may generally be distinguished,

First, by the escape of the meconium.

Secondly, by the organs of generation.

Thirdly, by the anus.

It may be said, that the division of the breech will assist in the diagnosis, but the truth is, that the nates are so pressed together, that the separation is not often to be traced.

The breech is found at the superior aperture of the pelvis differently situated, but this is far from being unimportant, because, if it be not lengthways in its relative position to the lateral or diagonal diameter of the pelvis, it enters the brim with considerable difficulty.

It is only necessary to advert to the practice of pushing up the breech, and bringing down the feet, to deprecate a recurrence to such maltreatment; nor is it much more prudent to employ blunt hooks fixed in the groins to expedite the progress of these labours, which if left to the native powers of the mother are usually terminated safely, though almost always slowly.

When the breech is expelled without the os externum, then the *direction of the toes* and all other circumstances requiring attention in presentations of the feet, must be borne in mind, because the labour becomes to all intents and purposes one of that kind.

The other varieties of this order of labours require (almost invariably) the operation of

TURNING.

An operation which consists in passing a hand into the uterus, finding the feet or knees, which on being brought down, usually produces that revolution in the situation of the child which has given to the proceedings, the designation of *turning*.

This operation is necessary, when the *upper extremities*, the *back*, the *abdomen*, (sometimes) when the *funis* presents; and now and then when peculiar circumstances demand expeditious delivery, even though the vertex may be the presenting part.

General Rules.

Turning ought never to be attempted until the rectum and bladder have been emptied, and the os uteri sufficiently dilated to permit the hand of the accoucheur to pass into the uterus with ease; and if possible, the operation should be performed before the liquor amnii escapes.

Considerable stress has been laid on the superiority of

some one position of the woman, and the use of one arm of the accoucheur over the other; but after all, no particular rules are of much use, for the operator will be compelled so to place his patient, and to use that arm which gives him the most command of the child in utero; and this will altogether depend on the circumstances of the individual case.

Generally, the woman may lie on her left side as usual, only with her nates over the edge of the bed, and the practitioner may use his right or left hand according as the feet of the child are to the right or left side of the pelvis, taking care always so to introduce the hand, that the child shall be in its *palm*, and the back of it opposed to the inner surface of the uterus; not forgetting the possibility and danger of carrying up the hand in utero outside the membranes and detaching the placenta, instead of introducing it within the membranes.

The hand when introduced into the vagina, and carried along it, should have the fingers conically arranged; and previous to its introduction, the hand and arm are to be well anointed with some unctuous substance. The customary practice of taking off the coat often terrifies and disgusts the patient, and cannot be necessary, if that article of clothing be made sufficiently large to admit of its being slipped up above the elbow; and trifling as this observation may be deemed by some, nothing that conduces to the comfort of a woman under these circumstances ought to be viewed as unimportant.

The hand and arm ought to be introduced during an interval of pain, and should always be flattened and passive whilst the uterus is exerting its contractile power, or the uterus may be injured.

The *upper extremities* can rarely pass through the pelvis followed by the body after the *sixth* month, unless the pelvis be unusually capacious, and the child smaller than ordinarily ; consequently, at subsequent dates, the situation of the fœtus must be changed in utero.

When the *hand* presents, it is known

First, by the shape and situation of the thumb.

Secondly, by the irregularity of the points of the fingers.

Thirdly, by its breadth and flatness.

Suppose then, on examining at the commencement of labour, the os uteri is not dilated more than the circumference of a shilling, but sufficiently to convince the examiner that the hand presents. Such a patient ought not to be left, lest the membranes should break ; their fluid contents escape; and the uterus firmly contract on the body of the child. As soon as the passages and the os uteri are sufficiently relaxed to admit the hand (strict attention being paid to the *general rules*), it is to be carried by a semirotatory motion along the axis of the part through which it is passing to the os uteri, and immediately on its introduction, it is to rupture the membranes and then to be continued upwards in utero, until the *feet* or *knees*, or one of either can be laid hold of.

The part thus grasped is to be slowly and gently brought down, taking care *never to draw down over the back of the child but always along the abdomen.*

The arm now recedes, and the case is converted into a presentation of the feet, and claims the same management.

But a variety of circumstances may occur to render the operation of turning not quite so easy as it may seem to be from this description of it.

The liquor amnii may have escaped for hours, and the uterus firmly embracing the child, and be contracting powerfully, so that on any attempt to introduce the hand most energetic contractile efforts are excited, which prevent its introduction without the exertion of that immoderate degree of force, which few men have hardihood to employ. In such a case, we have no alternative between overcoming the resistance by superior power, at the risk of bursting the uterus; or paralysing its irritability by a full dose of *opium*.

Many objections may be advanced to either of these methods; but on the whole, the best practice is to exhibit from *forty to fifty minims* of the tincture of opium, or about *three grains* of the gum. This being done, the woman is to be watched, and on the diminution or cessation of irritability of the uterus (which by the by is often greatly aggravated by incessant efforts to turn) the object may usually be more easily effected.

Should the liquor amnii have escaped, and the uterus be merely *passively* contracted on its contents, provided

the os uteri is dilated, turning should be immediately accomplished, lest *active* contractions should ensue: but should the *os uteri not be dilated* more than to admit the arm of the child to pass through it into the vagina, an accoucheur must wait its more complete dilatation, or laceration of the cervix uteri may be the consequence of his attempts prematurely to force his hand through it.

Sometimes, although the feet or a foot be brought into the vagina, the hand which was previously there remains, not having receded. This doubling of the child in the pelvis is extremely awkward, and will now and then be so from the first (that is, a hand and foot will have descended together, constituting the presentation). Such a case requires a *fillet*, which is merely a piece of tape or ribband with a noose, to be slipped over the ancle, and whilst the practitioner is employed in elevating the arm by one or two fingers fixed in the axilla, an assistant may not only prevent the return of the foot, but steadily draw it down by the fillet.

Manual interference is not only necessary to turn the child in utero, so as to bring down the feet; but sometimes after this is effected, *considerable difficulty attends the passage of the body and head of the child.*

Should ascites or hydrothorax exist, the fluid must be evacuated from the abdomen and thorax by the cautious introduction of a trocar or the perforator.

If the *arms* obstruct the descent of the child, the difficulty will generally be overcome by improving the

situation of them, so that they shall occupy the spaces in the pelvis near one sacro-iliac symphysis and opposite acetabulam; or the introduction of the fingers of the accoucheur into the axilla, or the blunt hook, may assist, provided the force employed be only moderate.

But much more frequently it is the *head* which offers the principal obstacle, and no little wisdom is necessary to secure its speedy extrication. The difficulty at this point of delivery will depend either on *malposition* of the head, or *disproportion* between its size and the dimensions of the pelvis. If *malposition* prevents the advancement of the head, the practitioner is to blame, because he ought to have placed the head (as soon as he could grasp the nates) in the most favourable situation in its relation to the longest diameter of the pelvis; and now powerful uterine contractions may have wedged it in either at the brim or in the cavity. Under these circumstances, the head must be very cautiously a little elevate and its position improved.

Should *disproportion* between the size of the head and the capacity of the pelvis, be the cause of difficulty, if *slight*, time may overcome it; if *considerable*, the bulk of the head must be diminished by the perforator introduced either behind the ear, or at the back of the head.

In some very rare instances *embryotomy*, or the extraction of the child piecemeal, may be necessary.

When *immoderate force* has been employed to extricate the head, it has been left in utero by the forcible

separation of the body. Such conduct is extremely culpable, because it may almost always be traced to indiscretion.

When this occurrence has taken place, it is necessary to have the uterus fixed by steady pressure on the abdomen by an assistant, whilst the accoucheur proceeds to extract the head. This may be done by the long forceps; or by fixing the craniotomy forceps, crotchet, or blunt hook in the foramen magnum ; always accommodating the head to the longest diameter of the pelvis during the extracting part of the proceeding.

Cases occasionally occur in which the perforator may be required, but no particular directions can here be necessary, except that the head must be kept steady at the brim of the pelvis, either by external pressure, or by the craniotomy forceps or crotchet fixed in the foramen.

The *hand coming down by the side of the head* is not properly a presentation of the hand, because if not mismanaged, it may generally be made a vertex case.

If on examination this mixed presentation be discovered, the hand may be cautiously raised above the brim of the pelvis, and kept there by the fingers of the accoucheur, until the head fully occupies the aperture, and consequently prevents the further descent of the extremity. But this cannot always be done, and it is then necessary to place it in the most advantageous

position, so that it shall add as little as possible to the bulk of the head.

This case will be made a complete arm presentation, if instead of the cautious interference just recommended, the hand be grasped and pulled down into the vagina.

Presentations of the *abdomen*, *back*, and *sides*, sometimes, though very rarely, occur. An intimacy with the general rules for turning, will be a sufficient guide for the management of such cases.

OF (what is termed) THE SPONTANEOUS EVOLUTION OF THE FŒTUS IN UTERO.

It is now generally admitted, that this singular phenomenon which was first attempted to be methodically explained by Dr. Denman, is not what he considered it —a spontaneous turning of the child in consequence of powerful uterine contractions, which force out the breech and feet, whilst the arm recedes *in uterum;* but rather a doubling of the fœtus, so that the arm changes its situation but very little, (perhaps not at all) whilst the nates are forcibly expelled before the upper extremity; the case becoming similar to a breech or foot presentation.

Several very respectable men have lately written on this curious subject, and the result of all that has been observed, confirms the opinion that the process is rather that of forcible doubling and expulsion, than of evolution;

still it does not appear that the occasional occurrence of this fact ought in the least degree so to influence the accoucheur as to lead him to neglect the proper time to turn the child by manual interference, when the presentation requires it; although the possibility of this result may tend to inspire hope that the case may terminate favourably, when turning is inadmissible.

Children born under these circumstances have all been expelled dead.

OF FUNIS PRESENTATIONS.

Whenever the umbilical cord enters the cavity of the pelvis before any other part of the body, it is exposed to that degree of pressure which frequently by interrupting the circulation of blood through it, destroys the life of the child. It has, therefore, always been a desirable object of attainment so to preserve the cord from pressure, or so to accelerate the expulsion of the child, that its life might not be destroyed.

First, then, it is advocated by some men that the funis may be so preserved from pressure that circulation through the cord shall not be interrupted. To secure this, an attempt may be made to carry up the funis into the uterus, and suspend it over the feet or hands of the child; or a piece of soft sponge may be so introduced between the fœtal head and pelvis of the mother, that the funis when once conveyed above it, shall not find room to slip down again; or the funis being drawn down, may be

enclosed loosely in a little bag, which is to be introduced and left within the uterus.

To accomplish this object, one or two fingers may be employed; but should they not be sufficiently long, a piece of wood or whalebone, with a little cross bar at the upper extremity, may be substituted.

Should these attempts be unsuccessful,

SECONDLY, *the operation of turning* is recommended; but before this is resorted to, several suggestions which materially present themselves must be attended to.

It should be borne in mind that all the advantage proposed to be gained is on the part of the child, the mother's life not being endangered by a presentation of the funis; consequently, as the operation of turning is sometimes destructive of the mother, it ought never to be performed merely to save the life of the child.

First. Unless the full consent of the patient and her friends is obtained.

Secondly. Unless she has had a child before, except the pelvis be unusually capacious, and the soft parts more than ordinarily relaxed.

Thirdly, unless there be proofs of the life of the child. And,

Fourthly. Unless circumstances are peculiarly favourable to turning; such as the uterus being distended with liquor amnii, and its contractions not strong; the head of the child being above the brim of the pelvis;

and the passages so relaxed and dilated to admit of the easy introduction of the hand, and the speedy delivery of the child.

Sometimes the funis and head will descend so rapidly into the pelvis, that *turning* is inadmissible. Such a case, if the pulsation in the cord be perceptible, and the os externum relaxed, may be beneficially terminated by the *short forceps*.

It will always be desirable to keep the funis towards one or other of the sacro-iliac symphyses, as the part of the pelvis where it will be least compressed.

Third Order.

LABOURS WITH PLURALITY OF CHILDREN*

Twin cases occur on an average, about once in ninety labours; and triplets, once in three thousand. Several well authenticated instances of four and five children at a birth are recorded; and *Dr. Osborne* states, that he has distinctly traced six fœtuses in an abortion.

Attempts have been made to determine on the existence of a plurality of children, *before*, *during*, and *subsequent* to parturition.

The evidence of the uterus containing more than one

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* Vide a curious and interesting paper on this subject by *Dr. Garthshore*, in the Transactions of the Royal Society, for June, 1787.

child, which is supposed to offer itself *before* labour, or during pregnancy, is too fallacious to be relied on;—such as enormous distention of the abdomen, with a longitudinal groove in the course of the linea alba, forming two distinct and lateral tumours; rapid ascent of the uterus; the sensation of twice quickening, &c.

Nor are the signs occurring *during* labour much less unequivocal; except, when the different parts of two children present at the same time. This demonstrative evidence has often occurred, and should put practitioners on their guard, not to proceed to extract a child by its extremities, without satisfactorily ascertaining that they belong to one child.

After the birth of one child, the existence of one or more remaining in utero is determined by *external* and *internal* examination.

The *external* proof is the size and consistence of the abdomen, the parietes of which, if there is a second child in the uterus, remain nearly as tense as before the expulsion of the first; still it must he borne in mind, that this proof is not individually conclusive, because the uterus may remain so uncontracted from other causes, as entirely to occupy the cavity of the abdomen.

Wheu it does so without containing another child, the uterine tumour is generally more moveable.

Internal examination is therefore necessary; and it is extremely unjustifiable in an accoucheur to omit both external and internal inquiry in any case of labour.

In every instance after the birth of the child, before extracting the placenta, after external examination two fingers of the left hand are to be carried into the uterus guided by the funis, and if its insertion into the placenta be felt, it is hardly possible for a second child to escape detection, taking care not be misled by a distended bladder, enlarged ovary, or by the membranes containing coagula.

Suppose a second child be discovered, it can hardly ever be prudent to communicate the fact to the patient, because powerful mental emotions do so much mischief. If her friends be prudent, they may be put in posesssion of the circumstance.

This species of labour is very differently managed by different men; for whilst some recommend the immediate extraction of the second child; others advocate the powers of nature in such unqualified terms, as to leave the case altogether to be completed by her. Again the sentiment, *media quodammodo inter diversas sententias*, forces itself on the attention of the dispassionate enquirer; and therefore, if neither hemorrhage, or exhaustion, or any other alarming symptom, demands immediate interference, it is well to wait an hour, to give the uterus and constitutional powers time to recruit; and usually, secondary pains come on and expel the uterine contents.

In all cases, the membranes as soon as the second ovum is detected, may be ruptured; and if the head or feet be the presenting part, nothing further need be done; but

should any part of the child present which requires the operation of turning, surely it ought to be immediately performed, before the recurrence of uterine contractions interfere with the free movements of the hand in utero; but here the operator must pause, and not at once proceed to deliver.

Should the secondary contractile exertions not commence at the expiration of an hour, such measures may be had recourse to as will re-excite uterine action; such as, abdominal friction, moderate stimulants, and the introduction of two fingers within the cervix uteri; and never let it be forgotten that the grand object to be aimed at is, to *re-excite uterine contraction;* for if the organ be suddenly and abruptly emptied, without any regard to the re-establishment of its contractile disposition, formidable or fatal hemorrhage may ensue; and considerable flooding is a very common consequence of the exhausted condition of the uterus, when it has been distended by more than one ovum.

In consequence of this, it is always prudent to watch the woman for some hours after delivery; and never to leave her until the uterus is well contracted, and the abdomen surrounded by a well adjusted bandage.

Although each child is generally enclosed in a distinct set of membranes, and has a placenta and funis peculiarly its own, still one placenta ought never to be extracted alone, because the vessels often anastamose; and if not, the removal of one, whilst the the other remained in utero,

would expose the woman to imminent danger from hemorrhage, which must almost inevitably ensue. When, therefore, the placentæ are extracted (and their removal must be governed by what is advanced in page 70) the funes should be coiled round each other, and the masses withdrawn together.

It has been been often noticed, that amongst quadrupeds one of twins is generally barren; and in some cases a discovery has been made after death, of the existence of the internal organs of both the male and female sex. A similar condition and consequence has been said to exist in one of twins in the human subject; but this assertion is far from being substantiated.

SUPERFŒTATION

is a subject involved in considerable obscurity, and therefore fortunately one of no importance.

The term *superfœtation* implies that a second impregnation may take place whilst a child is in utero; but this cannot be, if the theory of conception which assumes the transmission of the male semen along the uterus to the tubæ Fallopianæ, be correct; because the os uteri being blocked up by coagulable lymph, and the entrance to the Fallopian tubes being obstructed by the decidua uteri soon after conception, render such an occurrence impossible.

Those cases in which a plurality of children have existed, and in which superfœtation is supposed to have

occurred are either referable,

First, to the premature death of one fœtus, which has remained in utero with the living child to the full period of utero-gestation; or,

Secondly, to the descent of the ova into the uterus from the ovarium not observing the same order of time, one being more slowly evolved than another, although both might have been fecundated by the same coitus.

The explanation given by some physiologists, as founded on the existence of two or more uteri in the same woman, is unsatisfactory, inasmuch as it is doubtful whether these recorded cases of redundancy are to be relied on.

EXTRA UTERINE PREGNANCIES,

or as the title imports, gestation carried on in some other parts than the uterus, as in the *abdomen*, *Fallopian tube*, or *ovarium* is scarcely less curious and mysterious than the subject of superfœtation.

In these matters, theory must be a most uncertain guide; and it is only from a well arranged accumulation of observations that we can expect light to be thrown on these occasional deviations from the ordinary progress of nature in the situation and evolution of parts.

As yet, no facts have been advanced which are conclusive on the reality of extra-uterine *abdominal* pregnancy; and it is more than probable that those cases which are termed abdominal or ventral, did not exist in

the belly from the commencement of utero-gestation; but are the consequence of ova having escaped into the cavity of the abdomen, either by ulceration or laceration of the uterus.

In the majority of these cases, if the woman has not sunk under the first shock, such has been the constitutional disturbance that she has soon died; whilst in several well authenticated instances, a secretion of coagulable lymph has formed a new receptacle, in which the fœtus has quietly reposed for many years, until by the rectum, or by an abscess, pointing externally at some part of the abdomen, the different bones of the child have been expelled.

When the ovum has been detained in the *ovarium*, or arrested in its course along the *fallopian tube*, as it has increased in size by gradual development, the sac containing the fœtus has burst, and the woman has died of internal hemorrhage.

During extra-uterine pregnancy, the usual evidences of utero-gestation are present, but generally associated with some anomalous symptoms. The uterus generally becomes more or less developed, and secretes its decidua.

OF MONSTERS.

When cases of monstrosity occur, there is generally a disposition in the uterus to expel its contents prematurely, so that it is unusual to have much obstruction during labour arising from redundancy of parts.

Nothing is known of the causes which divert nature from her usual course of proceeding, consequently the production of monsters is altogether unintelligible; and although we have no demonstrative evidence that cases of monstrosity exist *ab origine*, we have much less proof that *the imagination of the mother* possesses the power of changing the structure of parts which have been once formed entire.

A great deal of curious and interesting matter might be brought forward on the subject of monstrosity, but the design of these practical pages excludes it.

All monsters may be arranged under the *four classes* of, defective; redundant; malformed, or misplaced; and hybrid; or those begotten by animals of different species.

The management of cases of monstrosity must altogether depend on the presenting part.

OF HYDATIDS AND MOLES.

These are what are popularly termed *false conceptions*, and respecting which a great deal that is ridiculous has been said and written, it being natural to an intellectual being to attempt an explanation of all the phenomena of nature, even of those of which it knows nothing but of their existence; and consequently the mystery which envelopes many of these phenomena is likely to elicit foolish hypotheses, and contradictory statements.

Hydatids are vesicles containing lymph, and each is said to have a body and head, with three or four antennæ

with or without fangs. They are usually united in numbers, by some common connecting structure, which is probably the medium of communication between them and the uterus, and the source whence they receive that low degree of life which they are supposed to possess.

Moles are fleshy masses of different sizes and density, and differing considerably in their structure, but always gorged with dark blood, slightly united by vessels to the uterus, from which their feeble vitality is derived.

It is conjectured that they are the result of the premature death of the ovum in utero, or the consequence of coagula, or a portion of retained placenta. All this is hypothetical, and it is more consistent with analogy to suppose them in their formation to be connected with some morbid condition of the function of the uterus usually associated with the changes it undergoes from impregnation, because the diseased uterine redundancies sometimes are co-existent with utero-gestation.

They are generally for some time attended by the common symptoms of pregnancy, which soon cease or become very anomalous in their character. Very frequently for some time after the breasts become flaccid, &c. the uterine tumour remains—in the case of hydatids being attended with occasional discharges of water; —and in the case of moles, with discharge of blood. Of course there are no movements of a child; and the size

of the uterus does not correspond to the ordinary bulk of that organ at the same period of pregnancy.

At very different periods, in different women, the diseased mass is expelled from the uterus with the ordinary symptoms of abortion ; and the case requires similar management. In some rare histories of these diseases, the morbid growth has remained in utero to the full term of pregnancy.

In almost every instance in which either hydatids or moles have existed, the general health has been deranged, and the condition of the uterus has been unhealthy. If possible, the cause must be discovered and appropriate treatment adopted. The state of the uterus is generally improved by abstinence from sexual excitement, and by the steady employment of cold bathing.

Fourth Order.

LABOURS ATTENDED BY CONVULSIONS.

Women are liable to epileptic seizures before, during, and subsequent to parturition; and in either case, they seem to arise from the same source, and to demand similar treatment.

Character of the Attack.

Sometimes the active symptoms about to be detailed come on without any that may be viewed as premonitory; but in the majority of instances, puerperal convulsions are preceded by vertigo; a sense of fulness and tightness about the head; ringing in the ears; the eyes are red, and feel as though they were too large for the sockets, with occasional flashes of light or bodies floating before the eyes, so as to render vision indistinct. With these symptoms, the pulse is usually full, hard, and very slow; but sometimes very rapid, and soon becoming small and feeble. The patient sighs often, and deeply; sleeps soundly and snores; and, in some instances, complains of violent darting pain alternately in the head and stomach, with considerable rigors, unconnected with the process of dilatation of the os uteri.

When these symptoms are not timely met by very efficient treatment, they are followed by a sudden deprivation of sense, the voluntary muscles become rigid, and then violently agitated. The eyes roll about with great

rapidity; the countenance becomes horribly distorted, swollen, and livid; respiration is hurried, and accompanied by a peculiar hissing noise, produced by quickly respiring, with fixed teeth, through a quantity of saliva.

This affecting and horrible scene terminates in stupor, which continues for an indefinite length of time, from a few minutes to an hour, when the poor woman recovers with sensations of extreme fatigue, with entire oblivion of the paroxysm.

Sometimes the first fit ends in apoplexy; or after reason has been re-established for a short time, the paroxysms of convulsive action return, and continue to recur for hours or days; and if the woman be in labour, they re-appear with pains; or the stupor remains between the fits.

These convulsions occur more frequently in first than in subsequent pregnancies or labours, and appear at any time after the sixth month of utero-gestation.

Causes.

The *essential nature* (or as it is usually termed, the *proximate cause*) of puerperal convulsions, is congestion of the vessels of the brain, with an irritable condition of that organ.

The *predisposing* and *exciting* causes are, pressure of the gravid uterus on the descending blood vessels; powerful mental emotions; morbid intestinal secretion; distended bladder; parturient exertions; and uterine irritation and distension.

Diagnosis.

It is of importance to distinguish genuine puerperal convulsions from hysterical paroxysms, which they often very much resemble. They may be discriminated by bearing in mind that in hysteria, the pulse is rarely affected; the paroxysms come on without the usual premonitory symptoms of convulsions, and attack feeble irritable women rather than those who are plethoric and robust—the usual subjects of convulsion. The fit of hysteria is associated with globus hystericus and palpitation of the heart, and is not followed by coma.

Prognosis.

Our opinion of the result of these cases should always be guarded; for although most women recover, if the treatment be appropriate and promptly adopted, still if the fit be preceded by intense lancinating pain about the stomach or through the head, and the patient remains comatose between the paroxysms of convulsive action, the danger is imminent.

Treatment.

The management of puerperal convulsions divides itself into *two* leading indications.

First: to unload the vessels of the brain; and

Secondly: to remove the exciting cause, whatever it may be.

To secure the *first indication*, (after having fixed the

mouth open by the interposition of a piece of wood between the teeth) the *lancet* must be considered as the sheet anchor on which the practitioner must depend. It is of the greatest moment that the blood be abstracted early, rapidly, and abundantly; that the vessels of the brain may be brought into a state of collapse.

If possible, on the accession of the premonitory symtoms, the temporal artery or the jugular vein should be opened; if not, a vein in both arms, and the incision should be so large that a considerable quantity of blood can be withdrawn in a short time. In this formidable disease, the quantity of blood must not be measured by ounces but by the effects it may produce on the convulsions; and it will often be necessary to repeat the blood letting again and again within the first few hours. Having unloaded the cerebral vessels in some measure, by the rapid and early detraction of from *forty* to *fifty* ounces of blood, should the symptoms not be suspended, from *fifteen* to *twenty* ounces may be removed, by cupping-glasses applied to the nape of the neck.

The scalp must also be shaved; and pounded ice in a bladder, or a cold evaporating lotion should be constantly applied to it.

The head and shoulders must be kept above the level of the trunk; and all stimuli must be absolutely prohibited.

The alimentary canal is to be thoroughly evacuated by the administration of enemata; and for this purpose

nothing answers better than about an ounce of soft soap in a pint of warm water. From five to ten grains of *hydrargyri submurias* may be laid on the tongue, and if the power of swallowing be not lost soon after this, a solution of *magnesiæ sulphas in infuso sennæ* may be given.

The exhibition of nauseating doses of *antimonium tartarizatum* will be highly conducive to the reduction of vascular action, and with this intention may be conjoined with the purgative medicines.

The *second indication* is to be fulfilled after ascertaining the exciting cause, which it is often very difficult to do.

It will always be prudent to empty the bladder and bowels; and it will sometimes happen, that after one or two copious and extremely offensive and dark coloured motions have been obtained, the paroxysms cease. But the condition of the uterus is the point demanding the most attentive consideration; and it is to be feared, that in many instances, too much importance has been attached to the immediate emptying of this organ, when it has led to the omission of blood letting and purging.

The result of careful observations made on the influence of delivery over puerperal convulsions seems to be,

First: that if the os uteri be rigid and undilated, any attempt to empty the uterus by the introduction of the hand into the uterus to expedite delivery, aggravates the

convulsions; and even when the mouth of the womb is open, such an attempt will often bring back the paroxysms.

Secondly: In most instances, the os uteri dilates rapidly in these mournful cases, or is easily dilatable; and in general, the parturient efforts are so powerful and frequent, that little advantage can be gained by any manual interference, until the head descends so low in the cavity of the pelvis, as to be easily embraced by the short forceps.

Thirdly: should very urgent symptoms appear to justify delivery before the head of the child has descended so low as to be within the reach of the short forceps, either the long forceps or perforator are to be preferred to the introduction of the hand into the uterus, should the attempt to turn produce any recurrence of convulsions.

Of course these last observations do not apply to cases in which the parts may be well dilated, or dilatable without any uterine action; or to such presentations as the arm, in which it is always necessary to change the position of the child by turning.

After delivery, puerperal convulsions in some instances have continued without any very ostensible cause. In these cases it is often necessary to persevere in the same plan of treatment as has been laid down; with the addition of successive blisters applied to different parts of the body, to produce counter-irritation.

Under these circumstances large doses of camphor have been given with decided benefit.

It is not uncommon after puerperal convulsions for the bladder to lose its tone, so as to require the introduction of the catheter for some time.

Fifth Order.

LABOURS WITH UTERINE HEMORRHAGE.

The practice of midwifery can scarcely present a more appalling and dangerous occurrence than uterine hemorrhage; and certainly there are no cases within the range of obstetric science, that demand more prompt, judicious, and vigorous treatment, than labours of this order.

Uterine hemorrhage may occur *before*, *during*, or *subsequent* to parturition.

Under the head of abortion, sufficient is advanced for the subject of hemorrhage occurring before labour, only that it must be borne in mind, that in the latter months of utero-gestation, the calibre of the blood vessles has become so greatly augmented, that the same causes then occurring may produce much more formidable flooding; and although medical treatment must be very similar to that which was recommended when treating of abortion, still it often becomes a very important consideration, whether or not it be essential to the safety of the patient to adopt some such means as will be referred to when considering the management of hemorrhage from the uterus during labour, or at the completion of the term of utero-gestation. At this time, uterine hemorrhage may be either,

First ACCIDENTAL, as the consequence of some oc-

currence which partially detaches the placenta from its connexion with the uterus, to which it is usually fixed at some part of the *fundus* or *corpus* uteri. Or,

Secondly: uterine hemorrhage may be UNAVOIDABLE, as the consequence of the implantation of the placenta over the os and cervix uteri*.

When hemorrhage is ACCIDENTAL† it may be produced by various

Causes.

Such as passions of the mind; violent exertions in jumping; dancing; coughing, &c.

It has also followed a blow or fall; and the lifting of a heavy weight.

The quantity of hemorrhage and the degree of danger greatly depends on the area of surface of the placenta detached from the uterus; the force of the general circulation; and the degree of pain; those cases being most dangerous in which there is little or no uterine contraction.

Sometimes the placenta will adhere to the uterus at every point of its circumference whilst it is so loosened

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* Vide Plate 10.

† The terms *accidental* and *unavoidable* are employed because they are in general use; not but that they are in some respects objectionable. They are used by *Dr. Rigby*, whose Work on uterine hemorrhage ought to be familiar to every one who practices midwifery.

at its centre, that a quantity of blood may be poured out into the space thus formed sufficient to endanger the life of the woman, without there being any hemorrhage per vaginam.

Treatment of accidental uterine Hemorrhage.

From whatever cause flooding may arise, it should always be viewed as a perilous symptom, and as one demanding prompt and active interference.

The following general directions must be universally and rigidly observed.

The woman should be laid on a mattress, in a horizontal posture, having the pelvis raised higher than the shoulders by some support less yielding than a feather pillow. The doors and windows should be opened, and the patient have no other covering than such as decency demands. No fire should be permitted to be in the room, and every talkative friend ought to be excluded. As little food as possible is to be given, and that neither warm or spiced. In fact, every thing that can diminish the momentum of the circulation of the blood must be sedulously employed.

The pubes, abdomen, and loins must have cloths dipped in the coldest vinegar or salt water, applied to them repeatedly; or pounded ice in a bladder, may be allowed gradually to dissolve on these parts. In addition to these means, salt, or vinegar, and water cold, may be injected into the rectum, and a piece of ice, if it can be easily obtained, may be introduced into the vagina.

If these means be strictly employed, the hemorrhage will frequently cease, or so diminish, as to place the woman out of immediate danger; but she must, nevertheless, be vigilantly watched.

Should such measures not be successful, something more must be done; and it is fortunate that not unfrequently, the uterus is disposed to empty itself quickly; a disposition which is facilitated by the relaxation of the cervix uteri in consequence of the hemorrhage.

Suppose, then, these efforts to arrest the progress of accidental hemorrhage are unavailing, two modes of proceeding have been proposed.

FIRST, to deliver the woman by turning the child in utero, and bringing down the feet; or, SECONDLY, merely to rupture the membranes that the liquor amnii may escape, and thus the uterus, by contracting on its contents, will so far diminish the hemorrhage, that the patient may go on with safety until the natural uterine contractions expel the child.

The *first* method appears to be best adapted to those melancholy cases in which there is an absence of all contraction of the uterus, or in which the pains are extremely feeble and inefficient, with a relaxed condition of the cervix uteri. When these two dangerous attendants on uterine hemorrhage are present, the operation of turning often produces some contractile exertions of the uterus, by which the danger is materially lessened.

The *second* method is applicable to those cases in

which there are labour pains, and from the concurrent experience of practical accoucheurs, it may be depended on as successful.

When hemorrhage is UNAVOIDABLE, the

Cause

is, implantation of the placenta *ab origine* over the cervix uteri, so that flooding very naturally occurs at any time after the fifth month, when the expansion of the cervix uteri lacerates those vessels which pass between it and the placental mass.

Hemorrhage from this cause places the woman in most imminent danger; for, on the accession of pains which dilate the os uteri, other vessels are torn, and the bleeding recurs.

Treatment.

This is a case in which we ought never to confide in the powers of nature, because expulsatory uterine efforts only augment the peril of the patient, and therefore the hand must be passed either through the substance, or by the edge of the placenta, and the child turned in utero.

Should the flooding be such as threatens to prostrate the powers of the system, the operation ought not to be

erred, or one gush of blood may close the painful scene; and whenever it becomes essential to the safety of the patient to proceed immediately, although the os uteri may not be open, it will be found in so *dilatable* a state as not to oppose any hindrance to the introduction of the hand into the uterus. When the hemorrhage

occurs between the fifth and eighth months, it is usually not very formidable at first, so that if the os uteri be not dilated or dilatable, the operation may generally be deferred for some hours with safety; whilst at the same time, it is of the highest importance not to permit the woman to be exhausted by the loss of blood before turning is effected.

If on examination per vaginam every part of the os uteri be found covered by the placenta, and no point be found at which it is thinner than another, the fingers must perforate the substance of the mass, and the hand of the accoucheur being passed through, the feet of the child are to be brought down through the aperture, and the woman delivered as soon as circumstances will admit.

Sometimes the os uteri is only partially covered with the placenta, so that the hand can be passed by its edge to the membranes without difficulty. Whenever this can be accomplished, it should be preferred to the passage of the hand through the substance of the placenta.

In whatever way admission may be obtained into the uterus, the operation of turning is to be performed under the guidance of those directions which have been already given*.

But uterine hemorrhage may occur after, as well as before and during the expulsion of the child; and

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* Vide Page 127.

flooding at this time often endangers the safety of women.

The hemorrhage referred to is not that loss of blood which very frequently attends that contraction of the uterus which expels the child, and at the same time loosens a small portion of the placenta; nor that which merely circulated through the uterus, and which on the complete detachment of the placenta, and the contraction of the organ is expelled from its vessels, now so diminished in their size; but it is those successive gushes or more insidious but not less dangerous stillicidium of the vital fluid, which if not arrested sooner or later, fatally exhausts the subject of them.

The *immediate consequences* of the flooding may not be alarming, and will very much depend on the velocity with which the blood escapes, and the constitutional powers of the patient; but if the hemorrhage proceeds, in some cases, in a minute or two the pulse sinks, the countenance assumes a wild and exsanguineous aspect, and the surface and extremities of the body become relaxed and bedewed with cold perspiration. The poor creature sighs repeatedly and deeply; vomits; becomes extremely restless, with hurried respiration; gasps, and expires.

Causes.

Torpor of the uterus, or *irregular contraction* of its fibres, is almost an essential feature of uterine hemorrhage occurring after the expulsion of the child; except

in those cases which arise from the placenta being partially detached, whilst the mass being still adherent and retained in utero, prevents the complete contraction of the uterus.

Torpor or a loss of contractile power, exists in various degrees, and sometimes to such an extent, that the hand, when introduced in utero, may be carried up to the scrobiculus cordis; whilst a well contracted uterus will be found like a hard tumour in the pubic region, and not larger than an ordinary sized cricket ball.

Original debility may produce this condition of the organ. It is also a consequence of protracted labour; of over distention of the uterus, as in twin cases; of the reprehensible practice of rapidly emptying the uterus, without permitting it gradually to contract; of omitting to support the uterus with a bandage passed round the abdomen; and of the exhibition of stimuli. It may also be brought on by prematurely raising a recently delivered woman, from an horizontal posture; and from inversion of the uterus, &c. &c.

Treatment.

A very superficial retrospect of the causes of uterine hemorrhage which have been enumerated, will teach the vast importance,

First, of securing or restoring the contractile powers of the uterus; and

Secondly, of avoiding every thing that can even

increase the force or frequency of the action of the heart and arteries.

To secure these objects, much that is preventative may be done by the mere avoidance of those causes which have been specified, and many of which are under our controul; and much that is *curative*, by the observance of those general directions, which were applied to the management of cases of accidental hemorrhage.

Although the loss of a small quantity of blood is common on the detachment and expulsion of the placenta, and does not demand interference; it is of the highest moment not to defer the adoption of energetic measures until formidable consequences begin to appear, because, if hemorrhage is allowed to proceed, although it may not immediately endanger the life of the patient, the constitution may be so enfeebled as to be unable to restore itself to its former vigour; or the foundation may be laid for chronic and fatal disease.

The *primary object* in the management of those cases of flooding which result from a loss of contractile energy in the uterine fibres, is to *re-excite the contractions of the uterus*, if they shall have entirely ceased; and to quicken their activity if they be continued feebly.

Whether then, the placenta be detached or not, the practice is the same, for surely nothing can be more culpable than the dangerous custom of some men, who recommend "that the hand must be immediately introduced within the uterus to grasp the placenta, and instantly

extract it." The consequence of such irrational practice is an augmentation of peril; for the very obvious reason, that the open mouths of a great number of vessels are exposed.

In some rare instances, the placenta is thrown off, and lays loose in utero, preventing the complete contraction of the organ. Whenever that is the case, there can be no hesitation about the propriety of carefully withdrawing it; but not unless the uterus has firmly contracted on it.

Internal irritation of the uterus with the hand; and *external pressure and friction;* with *the application of cold,* are the principal remedial means on which our dependance must be placed, to re-excite the action of the uterus; and without which a woman is not secure.

Whenever the uterus is found to be uncontracted, the hand is to be gently passed into it; and when introduced, to be freely but tenderly moved about within its cavity. Whilst this is being done, an assistant may employ friction to the abdomen or loins, round which a broad bandage should have been previously applied, that it may be gradually tightened without disturbing the patient; or whilst the left hand of the accoucheur is in utero, the right may grasp the uterus externally,—a measure which is often eminently conducive to the attainment of the object so much to be desired.

The hand is never to be withdrawn from the uterus, until it begins to contract, except it be to empty the organ

of coagula, which by distending it, will frequently prevent its contractions altogether until they are removed.

In less dangerous cases of hemorrhage, *the application of cold* to the pubes, perineum, abdomen, and loins, will frequently arrest its progress. This remedy may be applied by cloths wrung out of cold vinegar or salt and water; or by the more impressive method of dashing the parts with cold mixtures; or by the still more efficacious use of pounded ice in a bladder, allowed to dissolve gradually on the abdomen; or a piece of ice introduced into the vagina or rectum.

Should there be *irregular contraction* of the muscular fibres of the uterus, either constituting the *hour-glass* contraction, when the circular fibres are affected with spasm about the centre of the organ; or the *oviform* contraction, when all the circular fibres act spasmodically, whilst those which take a longitudinal course appear to be more than usually relaxed; the hemorrhage will be checked by such means as relax spasm, and induce regular and universal contractile efforts.

Flooding from this cause must be attacked by a full dose of opium (not less than forty minims of the tincture, or three grains of the gum), and immediately on the cessation of spasmodic action, which is manifested by the diminution of pain in the back, the hand of the accoucheur must be introduced into the uterus, for the purpose of gently dilating the stricture; emptying the organ of its coagula; and stimulating it to more healthy contraction.

Syncope, or fainting, is not an unfrequent consequence of flooding; and although it is beneficial when contrasted with continued hemorrhage, yet it must ever be viewed as an evidence of danger, and as indicative of extreme loss of energy in the vascular system.

It may be here observed, that there are *three* important agents concerned in restraining uterine hemorrhage; —uterine contraction; the formation of coagula, which block up the mouths of the bleeding vessels; and the contraction of the vessels themselves; for although muscular irritability may have ceased, the *contractility* of the arteries continues. It is therefore of great importance not to interfere with either of these powers; and as *syncope* never exists without that diminished action of the heart and arteries, which cannot send the blood to the brain or extremities with sufficient power to prevent a collapse of them, it becomes highly momentous to regard moderate fainting as a salutary symptom, because, during its continuance, the mouths of the vessels may and often do become so sealed by the formation of coagula, that hemorrhage ceases.

Syncope, then, being useful in checking the momentum of the circulation, and as a consequence, in putting a stop to flooding, ought never to be rashly interfered with, as it too frequently is by the exhibition of large and repeated doses of brandy, and other powerful stimulants. Still a woman must not be permitted to die from exhaustion, if it can be prevented; and therefore, when

extreme prostration of the vital powers exists with syncope, small and repeated doses of such stimuli as brandy, or ammonia, must be given. Under such circumstances, sprinkling cold water on the face and chest will sometimes rouse the almost ex-animate woman. Ammonia may also be applied to the region of the heart, whilst the flow of blood is invited back to the extremities by the application of warmth.

In a few words then, it must be admitted that the administration of stimulants and cordials to a woman in a grester or less degree exhausted by uterine hemorrhage, is one of the nicest points in obstetric practice, and as a general rule, it may be laid down, that they are admissible but in few instances, and only to be exhibited to such an extent as may be necessary to support or to restore the circulation.

It is not unusual for a woman to be apparently doing very well for some little time after delivery; and yet although the uterus shall have contracted in a great measure, blood may be poured out into its cavity so as to redistend it, and in consequence of the coagula blocking up the mouth of the womb, no hemorrhage shall appear per vaginam. Such a woman will complain of being faint, with tinnitus aurium; her countenance becomes pallid; nausea and vomiting, with extreme restlessnes, sometimes follow; the pulse sinks; and if she be not speedily relieved, after a slight convulsive paroxysm, or one or two gasps, she expires.

Such symptoms naturally lead to an external and internal examination, which detect a redistended uterus filled with coagulated and fluid blood.

Under these circumstances, no time must be lost, or vacillating and inefficient treatment may soon place the patient beyond the reach of means. One hand should be immediately introduced within the uterus, to empty it of coagula, and to stimulate it to contract, whilst pressure is made on the abdomen, and the uterus grasped with the other. Besides this, such other means as have been already recommended to restrain the flow of blood, should be promptly and perseveringly adopted.

When the uterus does not readily and completely contract, a small portion of blood is poured out, which coagulates and keeps up hemorrhage until it is removed from the organ by manual interference, or uterine contractions. Its expulsion will be accelerated by friction on the uterus externally.

Now and then, uterine hemorrhage is the consequence of partial or complete inversion of the uterus. This is in most cases referable to mismanagement; and if it be produced by the forcible extraction of the placenta, it ought to be known to the accoucheur, if he attends to the directions given for the withdrawment of the placenta from the vagina; and when discovered, should be immediately reduced.

The *consequences* of uterine hemorrhage are sometimes highly distressing, and not unfrequently indicate

considerable peril. Whenever intense pain in the head; extreme exhaustion; urgent thirst; and great restlessness supervene, the patient's recovery is doubtful, and her circumstances demand the most judicious management.

These symptoms require for their removal small quantities of the most nutritious and easily digested food, with the exhibition of camphor and opium, and other cordial and sedative articles of the materia medica, with mild aperients; and it occasionally occurs, that the local determination and congestion are so considerable, that notwithstanding the enfeebling cause primarily producing them, the comfort and safety of a woman will absolutely require local bleeding by leeches, or by the application of cupping-glasses.

The exhibition of very large doses of *opium*, to restrain uterine hemorrhage, has been recommended by several deservedly eminent accoucheurs.

Both reason and experience appear to concur in condemning this practice; for whilst it is admitted that under some circumstances opium is highly beneficial, its indiscriminate employment is undoubtedly fraught with mischief.

The result of calm and dispassionate investigation on this subject is, that opium in large doses, in cases of uterine hemorrhage generally does harm, by paralysing the contractile energies of the uterine and arterial fibres; and that this valuable medicine is useful, and only useful under the existence of some such circumstances as the following.

It is decidedly beneficial, when hemorrhage has gone on until the vital powers have become reduced extremely low; and when, with other symptoms of exhaustion, the stomach manifests great irritability.

It is no less valuable an agent, when hemorrhage is the consequence of irregular contraction of the uterine fibres, whether of the circular or longitudinal.

In either of these cases, it is a very efficacious article of the materia medica; but it appears most dangerous to attempt to maintain its utility, or to rely on its efficacy in cases of active and alarming uterine hemorrhage.

When exhibited under the before mentioned circumstances, to secure its full effect, it is necessary to give it in doses of four or five grains, repeating it every second or third hour whilst necessary, with a diminution of one grain from each successive dose.

Sixth Order

OF LABOURS, OR THOSE ATTENDED WITH LACERATION OF THE UTERUS OR VAGINA.

No occurrence is more sudden, unaccountable, and disastrous, than this melancholy event.

After an indefinite time from the commencement of uterine contractions, whilst every circumstance connected with parturition appears to be favourable, a woman may be seized by a most acute abdominal, rather than uterine pain, very sudden in its accession, and spasmodic in its character, accompanied by too unequivocal sensations of something bursting within the abdomen. This feeling is immediately followed by a cessation of pain; indescribable prostration of the vital powers; hurried and laborious respiration; feeble, rapid, or intermitting pulse; and vomiting. Sometimes the patient gives one, or two deep sighs, becomes extremely restless, gasps, and expires. At other times, she gets gradually more feeble, till she dies from internal hemorrhage, after a few hours. Now and then she lives until destroyed by the slower process of inflammation; still more rarely, notwithstanding the laceration shall have been so extensive as to permit the child to escape within the cavity of the abdomen, some well authenticated instances are recorded in which it has been extracted *per vias naturales*, and the woman lived to bear children subsequently; and others, in which the child has remained for years *in*

abdomine, and then discharged by the rectum, or by an abscess through some other part.

When the symptoms just enumerated occur, they naturally lead to an *external* examination, which detects the different parts of the child through the abdominal parietes; and a loss of the uniform circumscribed uterine tumour. An *internal* examination discovers hemorrhage and the partial or entire recession of the fœtus, unless it had previously entered the cavity of the pelvis, or been impacted at the superior aperture.

The Cause

of this mournful occurrence is very obscure, unless the general explanation of *powerful action* with *unusual resistance* be admitted as satisfactory. On this principle, it is obvious that this fearful castastrophe may occur to women with distorted pelves; or in those cases of preternatural labour in which the liquor amnii has escaped prematurely, and in which there has been impetuous and irregular uterine contractions on some projecting part of the child. It has also resulted from unjustifiably forcible efforts to turn the fœtus in utero, or to afford instrumental relief.

Management.

Notwithstanding the recommendation of some very celebrated accoucheurs to do nothing when the child has escaped through the laceration into the abdomen, but there to let it be smothered and remain, that the women may have the chance of conflicting successfully with the

constitutinal disturbance which inevitably ensues, and which if she bears up under, may leave her in a state to permit of her surviving till the child escapes by the slow and destructive process of suppuration; the practice appears most reprehensible and fatal.

A woman under these circumstances should never die undelivered. If the head of the child be within the reach of the short forceps, they must be applied; but if it be at the brim of the pelvis, should there be room enough, an attempt ought to be made to save the child's life, by the long forceps; or the operation of cephalatomia must be had recourse to.

When the child has receded altogether through the rupture into the abdomen, it must be traced into that cavity, and its feet or knees sought for, and cautiously brought back through the laceration.

In those truly melancholy cases in which the os and cervix uteri have not dilated, but remain rigid; and also in those cases in which the uterus empties itself into the abdomen, and is found contracted, the accoucheur ought promptly and fearlessly to perform the *Cæsarian operation*, by which he gives even to the woman, and certainly to the child, a better chance of escape than when they are left to the risk of dependance on the preservative and restorative powers of nature.

ON THE MANAGEMENT OF MOTHER AND CHILD SUBSEQUENT TO DELIVERY.

A most important revolution has taken place in this department of midwifery within the last half century; so that the treatment of puerperal women is very generally now as natural and prudent, as it was formerly unwise and detrimental.

Supposing then the child and placenta to be expelled, the accoucheur being satisfied that the uterus is well contracted; the bandage which had been passed loosely round the abdomen previous to delivery * is to be moderately tightened; and after the removal of any coagula that may have escaped from the uterus, soft and well aired napkins are to be applied to the labia pudendi, and above and below the nates, so as to be interposed between them and the wet clothes.

Presuming that neither hemorrhage or any other circumstance requires a state of absolute rest for a longer time, the woman may remain for half an hour in the same situation as when delivered; after which, her soiled linen may be removed, and the clean clothes which had been previously passed round her chest, may be drawn down, and she very gently moved up in the

* It is of high importance not to omit this article of dress, for to its omission may be traced many of the most distressing *sequelæ* of parturition.

bed by one assistant at her shoulders, and another at her feet. Whilst these things are done, the patient should be a *passive* being ; and on no account be raised from her horizontal position, as hemorrhage, syncope, prolapsus, or inversio uteri may be the consequence.

After this, she may take some simple nourishment ; the room should be kept dark, cool, well ventilated, and free from talkative friends ; and the medical man on seeing her before leaving (it being presumed that he remains in the house until the woman is comfortably in bed), should enjoin strict quietude of body and mind with abstinence from fermented liquors or spiced food.

For some time after delivery, the food of a puerperal woman should be less in its quantity, and more simple in its quality, than she was accustomed to before, because whilst a lying-in room is not a sick room, yet so sudden and so great is the change in the habits of the patient, perhaps from high activity to perfect quietude, that the same diet which she was previously taken could not now be borne without inconvenience.

It is customary to compel a women under these circumstances to live almost exclusively on gruel or broths ; and it is no uncommon thing for her stomach to be most involuntarily distended with several pints of these articles daily. The practice seems extremely irrational, and is often highly injurious. It frequently not only enfeebles the stomach, but by keeping up constant perspiration, debilitates the whole system, and renders it very sus-

ceptible of cold; and is one cause of an immoderate secretion of milk, which becomes a source of great distress to the patient. For some days after delivery, therefore, whilst these articles may constitute a part of her diet, their quantity may be less, if in the middle of the day a light pudding, containing an egg or two be substituted. The components may be varied until the woman resumes the ordinary family diet, which if nothing unfavourable has occurred, she may begin to do about the tenth day.

And whilst it is not intended to enter fully into this subject, still it is one of so much moment as to justify a few more remarks, which are purposely very general and familiar in their character, and bear equally on parent and child.

The diet of a nurse should be simple, nutritious, and such as is easily digested. It is an established fact that if plain and nourishing, a mother may with impunity to a child gratify herself in any article of food, if she at first habituate her stomach to it, and it will rarely be found that any thing will disagree with an infant which agrees with herself.

Unless the state of the health requires wine or beer, most nurses who have good sense enough to try, will find the comfort of their feelings best consulted, their constitution best supported, and the improvement of their infants most rapid, when they avoid spirits, wine, or beer, and drink milk as their ordinary beverage.

Some women may require a draught of good ale twice a day, but the cases are rare, and in no instance should the ordinary porter be taken, because it is charged with ingredients poisonous to nurse and child, and the drinking of it is a fruitful source of disease.

A nurse should live on a proportionate quantity of animal and vegetable food. No objection, but such as is traditionary and unfounded, can be advanced to her partaking moderately of any well boiled vegetables or ripe subacid fruit. Her meat should not be much salted or fat, and rich pastry for her own sake, as well as for the welfare of the child should be avoided.

At least one hearty meal of meat should be eaten daily with a proper quantity of vegetables, and in general the diet of a nurse ought not to be greatly altered from that to which she has been previously accustomed.

It is a common prejudice, and a great error that nurse should "live well," in the abused acceptation of the words. Nutritious diet is certainly necessary, but rich living renders the milk gross and indigestible.

It is of some importance that food be taken frequently, and in small quantities, as the milk is secreted in a few hours, probably in about five after the stomach receives its nourishment. The milk is then fit for the sustenance of the child, but if secreted much longer, it becomes unfit, because the serum or thinner parts become absorbed, and those parts only which are digested with more difficulty, remain in the breast.

There is an evil too generally prevalent, and most pernicious in its consequences on individuals and on society, and by no means confined to mothers in the lowest classes of the community, which cannot be too severely reprobated;—it is the wretched habit of taking wine or spirits to remove the languor present during pregnancy and suckling. It is a practice fraught with double mischief, being detrimental both to mother and child. The relief afforded is temporary, and is invariably followed by a greater degree of languor, which demands a more powerful stimulus, which at length weakens, and eventually destroys the tone of the stomach, deteriorates the milk, and renders it altogether unfit to supply that nutriment which is essential to the existence and welfare of the child.

Some young mothers greatly increase their fatigue in suckling, by the awkward manner in which they place their children at the breast. A woman should use her child to such positions in giving it suck as are most easy to herself. If in bed, the child should take the breast as it lies, and not incommode the mother by obliging her to sit up in bed; because, without any benefit to the child, the mother's fatigue is greatly augmented. When up, the mother should by all means sit upright, and raise the child to her breast. The distorted posture so commonly seen in suckling, produces excessive pain in the back and limbs, without relieving the child in any respect.

Fretfulness, agitation, and violent emotions of the mind, invariably do injury to an infant at the breast. The milk becomes vitiated, its secretion very often diminished, or altogether suspended, and the little sufferers have in many well authenticated instances fallen victims to the indulgence of these passions by the nurse or mother.

Unless very peculiarly urgent reasons prohibit, a mother should support her infant on the milk she herself secretes. It is the dictate of nature, and the requirement of common sense and reason. Were it otherwise, it is not probable that so abundant a supply of suitable food would be provided to meet the wants of an infant, when it enters on a new state of existence.

It is difficult to estimate the mischief resulting from infants being deprived of their natural nourishment; for however near the resemblance may be between food artificially prepared, and breast milk, still reason and observation demonstrate the superiority of the latter to the former.

No children exhibit such unequivocal signs of health, or bear up so well under disease, as those that live exclusively on the breast. Wherever instinct and nature are permitted to teach, such is the course which they point out, and happy would it be for mankind, if parents would so far return to a state of nature, as to regulate their own diet, and that of their children, by her simple and salutary dictates.

In many parts of the world where children attain to the greatest beauty and vigour, they are not permitted to have any other nourishment but the mother's milk, till they have attained the age of twelve months; and some of the finest and most robust children to be seen in this country are those that are reared in a similar manner.

And as a further inducement, it should be remembered that medical men concur in their opinion that very rarely does a constitution suffer from giving suck; whilst the health of many women is most materially improved by the performance of the duties of a nurse. Delicate females are generally strengthened by nursing, and many of the complaints incident to women are removed by it. If we except the period of pregnancy, fewer women die whilst nursing, than at any other period of life; and it is a very common observation that their spirits are more lively and uniform, their tempers milder and more even, and general feelings more healthy and pleasant, than under any other circumstances.

A very serious evil resulting from a woman neglecting this imperious duty, is the probability of her becoming more frequently pregnant than the constitution of most females can sustain without permanent injury. A woman who suckles her children, has generally an interval of a year and a half, or two years between each confinement; but she who without an adequate cause for the omission, does not nurse, must expect to bear a child every

twelvemonths, and must reconcile her mind to a shattered constitution and early old age.

But few mothers, comparatively, are to be found, who, if willing, would not be able to support their infants, at least, for a few months ; and parental affection and occasional self-denial would be abundantly recompensed by blooming and vigorous children.

Presuming that the laudable determination is formed to indulge the child with that nutriment which is designedly for its support, it becomes necessary to state, that unless very strong objections should exist, *twelve hours* should never elapse before the infant has been put to the breasts. Instinct directs it what to do, and the advantages of allowing it to suck soon after birth are many and important, both to the mother and child.

By this commendable practice, the parent is generally preserved from fever, from inflamed and broken breasts, and from the distressing and alarming consequences resulting from these complaints.

If the breasts should not have secreted milk previous to delivery, the act of suckling will encourage and expedite the secretion. Thus the mother will be saved from much of the pain, connected with distended breasts. Besides which, if the infant be not put to the nipple till the breasts become full and tense, the nipple itself will sometimes almost disappear, on account of its being stretched; and without much, and often ineffectual labour on the

part of the child, it cannot be laid hold of, and even then the pain endured by the mother is exquisitely severe, and not unfrequently the cause of sore nipples.

It must be admitted that some mothers cannot suckle their infants; still it should be attempted, unless it is altogether impossible; for though a woman may not be able to persevere for any considerable time, yet suckling, if but through three or four weeks, may avert those local and general complaints which have been before named. Many nurses are too often discouraged when children are awkward in taking the breast, or when the nipples are flat and sore.

And here it may be well, just to say a few words on those troublesome and painful complaints. *Flat and sore nipples* are in most instances produced by the unnatural practice of pressing them in by tight stays. A strong healthy child should be applied to draw them out when too flat for a new born infant to take hold of. The superficial ulcers and cracks which so often take place on the nipples, and give such exquisite pain, may generally be *prevented* by washing the nipples night and morning for some months before lying-in, with brandy and water, or with a lotion composed of two scruples of sulphate of zinc, half an ounce of spirits of wine, and two ounces of rose water. It is of much importance to keep the nipples dry after the child has done sucking. When they become sore, great attention is required. The infant should draw them through an ivory or glass shield

with the prepared teat of an heifer. The nipples must be always covered with the shield, so that they may not be liable to pressure, and great care should be taken that the newly formed tender skin be not torn off, by the coverings of the breast being permitted to stick to it.

Not unfrequently, if the mother has but resolution to make the attempt, she will be able to suckle, though she may have been foiled in two or three, or more, previous confinements.

It would be endless to enumerate the variety of things which have been recommended to invigorate the constitution and increase the flow of milk. Let it suffice to affirm, that if no positive disease exists; plain, generous, and nutrtious diet, regular exercise, and cold bathing two or three times a week, embrace all that is necessary to accomplish so desirable an object.

A medical man ought never to think it beneath him to direct a nurse or mother on those little attentions which a new born infant demands on its being ushered into the world. The temperature which it leaves is about ninety-eight, consequently care is required that it be not suddenly exposed to a reduced temperature, or to the heat and glare of a fire.

A receiver of fine flannel, with a square of old soft linen or calico tacked on its centre, should be in readiness for its removal when born. Flannel itself is too harsh for immediate contact with the delicate skin

of an infant at first, though well adapted to keep up that degree of warmth which it brings with it.

Cold is very unfriendly to the tender state of an infant and though a child overheated by an immoderate load of clothes suffers from red gum and other complaints, yet for a time warm clothing, with that quantity of animal heat which a mother's bosom communicates, are requisites for its comfort, and essential to its thriving. The modern refinement of cots, and the injurious apprehensions of children being overlaid, has banished many a weak and delicate infant from a nurse's bosom (its natural and best bed) to a crib, where it has passed night after night in cries, from its inability to generate sufficient heat of itself for its comfort, and eventually has fallen a victim to cold and neglect. Still it should have plenty of pure air, which must freely circulate about its bed, whilst prevented by a curtain from passing in a current immediately over its body.

The mucus which covers the body of a child at its birth, is best removed by a soft sponge with warm water and soap. A nurse should not be over anxious to remove every particle at the first washing, because, by too much rubbing, the skin becomes irritated and inflamed, and by the second attempt, the surface of the body may be thoroughly freed from this substance. This indeed is necessary, or perspiration becomes obstructed, and the skin liable to eruptive diseases.

Many nurses never wash the head of an infant after the

first time, except with spirits. The omission of washing it is unjustifiable on every principle, and the custom of rubbing the head with spirits, has nothing to recommend it, but on the contrary, is the common cause of giving cold on account of its speedy evaporation, which carries off heat that can never be spared. Let a mother rub a little spirits between her own hands, and she will never allow the tender head of her babe to undergo the same operation.

The navel string may be wrapped round with a piece of soft and well aired linen, and carefully laid down. Burnt rag is very objectionable: it is in no case of any use, and frequently produces inflammation, and an ulcer that heals with difficulty. Should an ulcer remain after the funis drops off, which generally takes place in a few days, the part may be moistened with a little goulard water, and afterwards have applied to it a little spermaceti or simple ointment, spread on lint. This may be renewed every time the child is dressed, till the wound is healed.

Were it not that the brutal practice of forcibly pressing out the fluid which distends the breasts of some new born infants, yet prevails, it would be unnecessary to refer to the unfeeling custom; nothing can justify it, for not one child in an hundred requires any attention on this point, and when it does, the opinion of the medical attendant should be taken.

The object of *clothing* is to defend us from cold, and happy would it be for the rising generation if mothers

and nurses could be convinced that this may be accomplished by light warm clothing, without confining the body by bandages, or loading it with covering weighty enough for half a dozen children; and surely nothing but a slavish adherence to custom can sanction a practice as absurd, as hurtful—the ridiculous length of an infant's clothing, which in many cases by its weight produces deformity of the feet, and must always be a source of considerable pain to a feeble child.

Ease and moderate warmth are the two grand objects to be habitually kept in view in clothing infants, and because they are disregarded, it is that we wander so far from the simplicity of nature and the obvious dictates of common sense.

The ease and comfort of a child may be consulted and promoted by avoiding all unnecessary bandaging. Every species of swathing prevents the free performance of the various functions. Flexion and extension of the joints should be quite unrestrained, and clothing which in any degree impedes free motion, and thus counteracts, by its confinement, the natural efforts of a child, must be extremely injurious.

An infant has been not unaptly compared to a bundle of fine vessels, through which a fluid is to pass undisturbed, to be distributed equally through the body. For this purpose it is surrounded by a soft medium which cannot sustain pressure to any degree without injury. Yet what is more common than underthe idea of weak-

ness, to roll tightly a delicate babe which but just before swam in fluid, to preserve it from the pressure of surrounding parts? Opposition is by this means continually made to the freedom of circulation and of breathing; and the fruitless efforts made by an infant to relieve itself, when bound, not only retard its progress, interfere with its growth, and waste its powers, but is a common cause of that deformity which so frequently and loudly condemns the unnatural practices of nurses.

The modern art of dressing not only impedes the growth of children, but most sensibly diminishes their enjoyment; for every attentive observer must have noticed the evident pleasure experienced by them when undressed and permitted to roll about free and unharnessed.

Having made these general remarks on the *domestic* management of the mother and infant, it remains to add a few suggestions on their *medical* treatment.

Nothing can be more irrational than the too prevalent custom of exhibiting large and repeated doses of *opium* to a woman after delivery. It is true that a patient after labour is found in a state of fatigue and irritability, and may therefore be benefited by a single and moderate dose of this article; but the frequent repetition of it is decidedly injurious, not only by producing the ordinary unpleasant effects of opium, but more especially by its influence over uterine action which it so enfeebles or suspends, as to counteract the efforts which it makes to expel coagula, and perfect its restoration to its original

dimensions by those secondary and very salutary contractions, termed, *after-pains*, and for the removal of which opiates are so universally and so generally prescribed. These should rather be encouraged (than counteracted) by the occasional employment of friction over the uterine and lumbar regions, and by the exhibition of a purgative, which during its operation materially assists and accelerates the contractile energies of the uterus.

On the second day subsequent to delivery, the bowels should be acted on by a common domestic enema*, or by the exhibition of a moderate dose of castor oil, or any other mild aperient.

The early employment of purgatives, also, moderates the secretion of milk, by which the woman is saved from considerable suffering. Should it happen that the breasts become extremely tumid, hot, and painful, it will be necessary to act more freely on the bowels, so as obtain several loose motions daily, and this object will be best secured, by repeated doses of some saline aperient. In addition to this, the breasts must be kept very cool, and

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* Many well instructed nurses consider a large pewter syringe for the administration of a glyster, to be an essential part of their travelling apparatus. This should be encouraged by medical men, because, there can be no doubt but this method of acting on the bowels is preferable to the taking of purgative medicines by the mouth, inasmuch as the large intestines are found at this time most torpid from the long continued pressure of the gravid uterus.

every few hours, gentle friction of them should be enjoined on the nurse. This may be performed by the hand, between which and the mammæ, there should be interposed a little hair powder or oil, and the latter may be medicated by the addition of camphor, as in the *linimentum camphoræ*.

The patient should live rather low, and take every article of food cool. She should be allowed ripe subacid fruit, and prohibited from taking any more fluid than is absolutely necessary, by which *plethora ad molem* may be in a great measure avoided. The lactiferous tubes must be kept frequently emptied, either by the infant, or by the exhausting breast syringe.

The *bladder* now and then does not perform its functions as it should after delivery; and this inability occurs sufficiently often, to render it a part of the duty of an accoucheur on his first visit, to inquire of the nurse into the state of this organ, and to reiterate his inquiries until he is convinced by the most unequivocal language, that his patient has really emptied the bladder, and not merely parted with a small quantity of urine by stillicidium; and should any doubt remain on his mind, he should examine externally above the pubes.

Many women suffer during the remainder of their lives from the very general and reprehensible custom of indulging themselves in an upright position; and even those who are solicitous to remain longer than is necessary in bed, often do themselves much mischief by a half

recumbent posture, presuming that if the lower extremities are kept horizontal, the position of the trunk is unimportant. The absurdity of this opinion is so manifest, that it needs no refutation, nor can it excite surprise that procidentia uteri, sanious discharge, and subsequently leucorrhœa, should be the consequences of such malpractice, when the relaxation of the passages, and the size and weight of the uterus are considered. Still there can be no necessity for a woman to be confined under the bed clothes for a month; and if the horizontal posture of the pelvis and body be preserved, it may be done as well on the outside of the bed, or on a sofa.

Of the Lochia.

The lochial discharge (or "cleansings," as it is called by nurses) is a sanguineous secretion from the extremities of the secerning vessels of the uterus, which being mixed with detached and decomposed filaments of the tunica decidua uteri, continues to flow from the passages from five, to thirty days, after parturition.

At first, it is decidedly sanious, but in a few days it becomes of a much paler and brownish, or of a dirty green hue, so as to acquire among women, the term of "green waters."

The quantity of this discharge varies very much in different women; in some being extremely scanty, especially in those who have lost much blood by uterine

hemorrhage; whilst in others, the secretion is so profuse as to require medical interference.

When the discharge is excessive, it is not unfrequently hemorrhagic, constituting the *menorrhagia locialis* of authors, and may generally be traced to sitting up prematurely; or to improper diet and regimen, such as high seasoned food, and fermented liquors; or keeping the lying-in room at a high temperature. For the removal of this local affection and the consecutive constitutional derangement, it becomes necessary to employ cool air; absolute quietude of mind and body, in a recumbent posture; and a cold and astringent injection, *per vaginam*, for which nothing answers better than equal parts of aqua distillata, and liquor aluminis compositus. This may be thrown up two or three times daily, and conjoined with it, the bidet may be used to the loins and pubes. Sea bathing, with any other means likely to give tone to the system, should be recommended. Every circumstance and engagement, with all such articles of food as accelerate the frequency, and increase the force of the action of the heart, must be avoided. The internal exhibition of the mineral acids, with catechu often does good; and sometimes benefit is derived from a combination of myrrh and iron, as in the *pilula* or *mistura ferri composita*.

With respect to the medical management of the *infant*, it is merely necessary to state, there can be no doubt by what is observed in wild animals, that if the habits of the human species were equally natural with those of the

brute creation, the breasts of the mother would contain a sufficiency of the first milk to purge the infant and carry off that quantity of dark coloured mucous which is found in the bowels of new-born infants. But as this is not the case, it is the least of two evils to have recourse to the unnatural practice of exhibiting a little opening medicine which will accomplish, what, in a state of nature the milk first formed, would do.

The absurd practice of compelling the child to devour a quantity of sugar and butter immediately on its entering the world, should be strictly forbidden. Yet something is necessary to carry off the contents of the bowels, (a dark secretion termed *meconium)* and nothing answers better than about half a drachm of castor oil, which may be repeated once or twice if found necessary; or if preference be given to a formula, the following, although rather unchemical combination may be prescribed.

R. Olei ricini. dr. iij.
Syrupi rosæ dr. i.

misce pro mistura aperiente, cujus, cochleare minimum, quarta quaque hora, donec alvus bene soluta fuerit, detur.

ON THE CAUSES OF SUSPENDED ANIMATION AT BIRTH, AND THE TREATMENT OF STILL-BORN CHILDREN.

Before terminating these very familiar observations on the medical attentions which are required by the infant, it may be well to refer to the highly criminal conduct of too many accoucheurs, who permit what are termed *still-born* children to be laid aside as dead, without any efforts to ascertain whether the vital principle is extinct, or whether animation is merely suspended.

Several very interesting and well authenticated instances are recorded of infants born apparently dead, who by persevering exertions have been resuscitated, although for nearly two hours after birth the evidences of vitality were so indistinct as to leave it doubtful whether or not they existed. Nothing less than decomposition of animal structure should be deemed a justification of abandonment of a still-born child, and if this proof of its death be wanting, all the usual methods of restoring suspended animation should be had recourse to, and steadily persevered in for at least half an hour; for even should there be no prospect of success, the attempt is always pleasing to the parents of the infant, and satisfactory to a feeling mind.

Whenever, then, a child is likely to be still-born from of the cranium; from labour protracted by a small or compression of the funis; from long continued pressure

distorted pelvis; from feebleness; or any other cause; warm water ought to be in readiness, into which immediately after birth it may be immersed up to the chin, whilst by the insertion of a curved silver tube (without which no medical man should ever go to a labour) into the trachea, respiration should be imitated, by alternately inflating the lungs, and expelling the air by pressure on the thorax. In addition to this, friction about the region of the heart must be employed, and some gentle cordial or stimulant should be exhibited.

Should the circulation in the funis have ceased, no possible advantage can arise from deferring the separation of the child from the mother; but should the pulsation be going on feebly without respiration having commenced, it may be well not to divide the funis until the child decidedly breathes or cries.

The funis of a still-born child never ought to be tied immediately, because it will often be found, that feeble and laborious, and even suspended respiration (the consequence of long continued pressure of the brain) will be changed to perfect and regular breathing, by permitting a drachm or two of blood to flow.

Were it not that children have been lost in consequence of the membranes preventing respiration, by covering the mouth and nose, it would be unnecessary to remind medical men that such has been the cause of death in several well authenticated instances, in which life has been sacrificed at the shrine of inattention.

Plate, 1.

PLATE I.

This plate represents the child in utero at an early stage of natural labour. The head is at the *brim* of the pelvis, having its long axis so situated as to correspond with the longest diameter of the pelvis, that is, diagonally or obliquely; the forehead and occiput being opposed to the sacro-iliac symphysis and opposite acetabulum,—the forehead being directed to the right sacro-iliac symphysis, and the occiput to the left acetabulum.

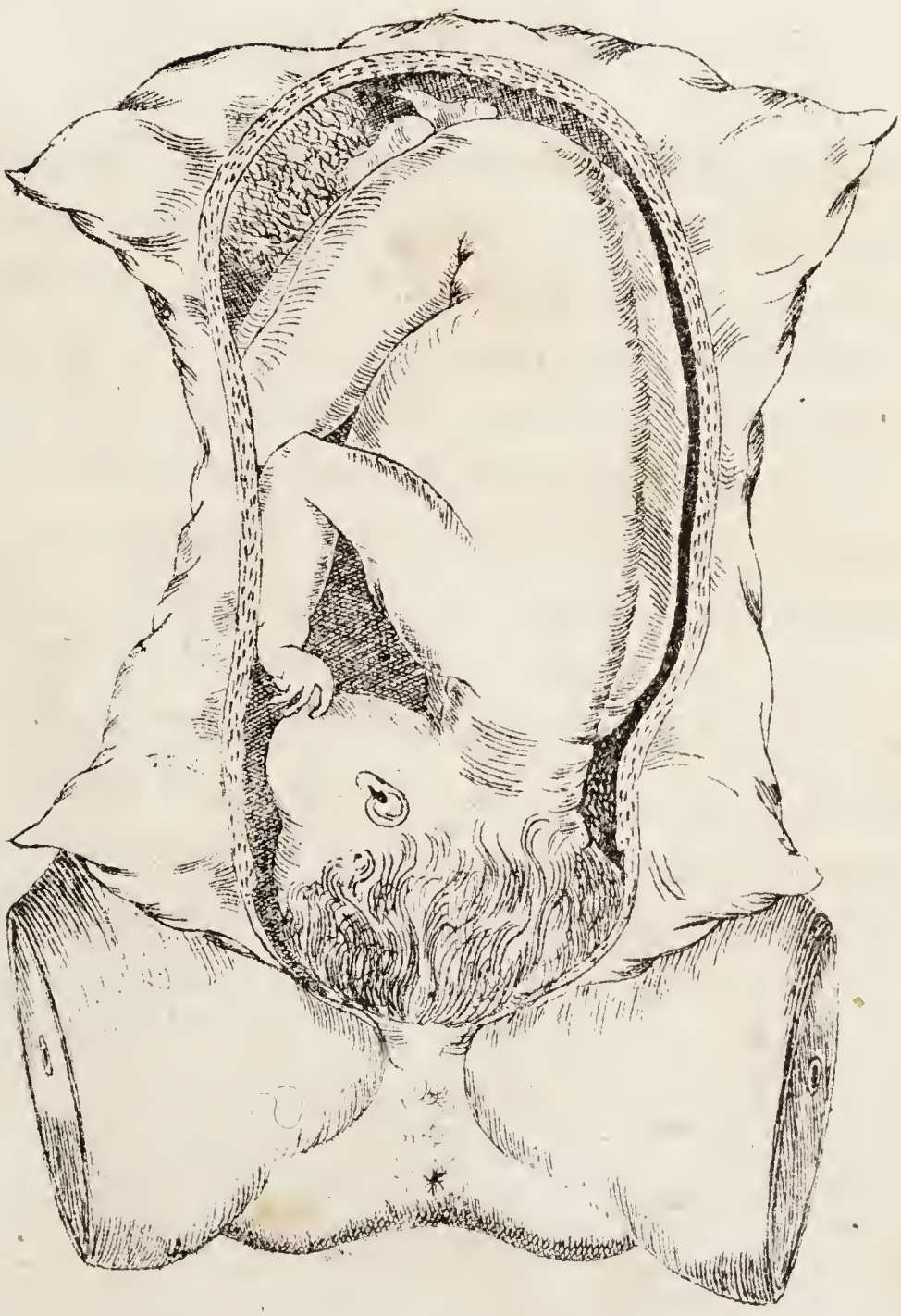
This position of the head, in relation to the circumference of the pelvis, is the one which nature usually secures by her unaided powers.

PLATE II.

The head of the child is represented in this engraving in its usual situation when it has entered the *cavity* of the pelvis. It will be observed, that in its relation to the circumference of the pelvis, it has undergone very little change, except that the forehead is directed a little more backward towards the hollow of the sacrum. Its further descent, without some change of position, is resisted by three obstacles; *first*, by the sacro-ischiatic ligaments: *secondly*, by the spinous processes of the ischia; and, *thirdly*, by the shoulders of the child, which at this time have their longest axis opposed to the shortest diameter of the brim of the pelvis, that is, to the promontory of the sacrum and symphysis pubis.

Vide page 67.

Plate. 2.



Plate, 3.

PLATE III.

In this representation, the head of the child is found very differently situated, from the position which it occupies when at the brim, or within the cavity of the pelvis.

At this stage of the inimitably beautiful and well arranged process of natural labour, the longest axis of the head is adapted to the longest diameter of the *outlet* of the pelvis (or from before backwards) whilst the same change causes the longest axis of the shoulders to correspond with the longest diameter of the brim of the pelvis through which they are at this time passing. The causes of and the necessity for this change in the relative situation of parts, is fully treated of under the subject of *natural labour*.

Vide page 68.

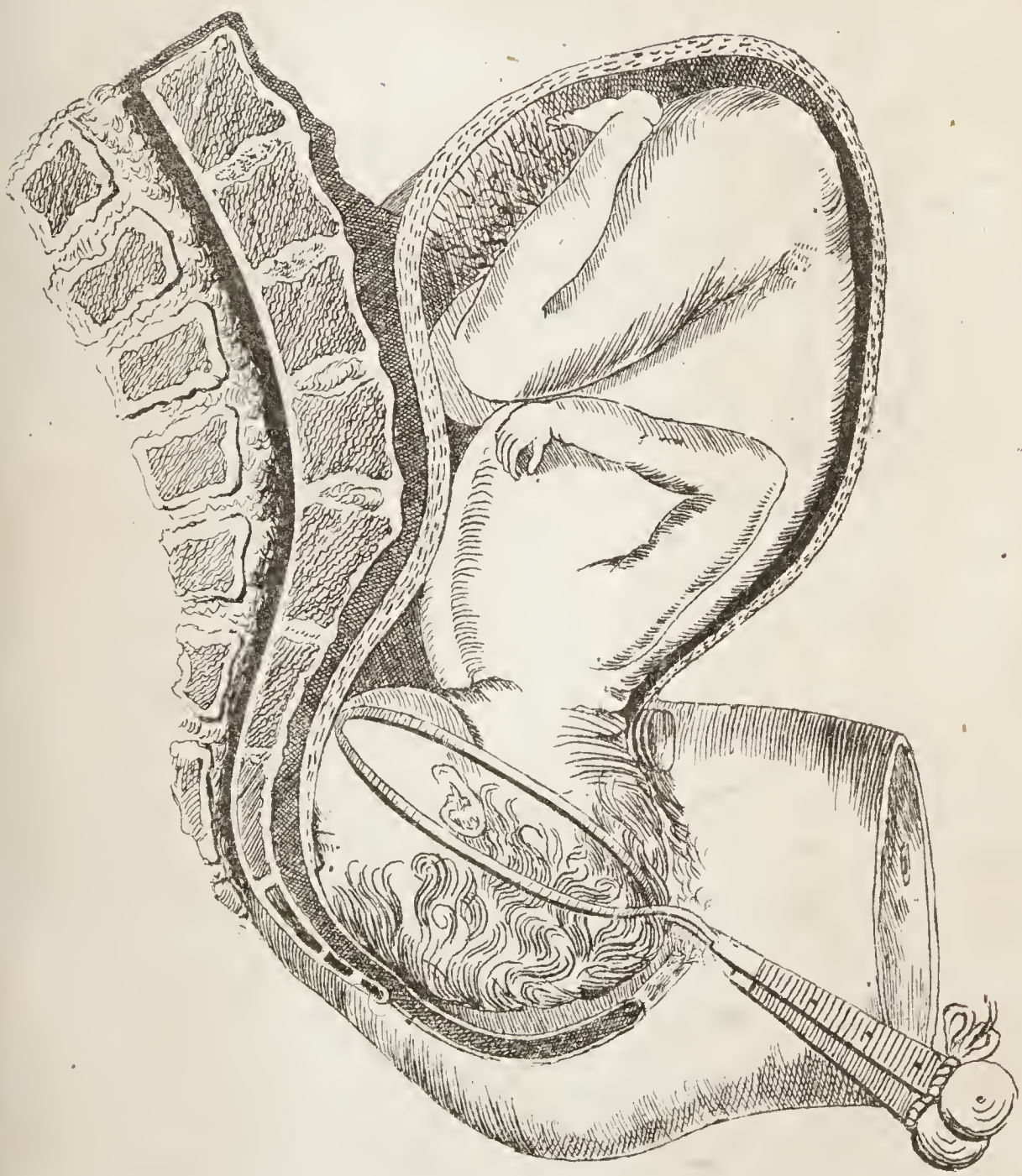
PLATE IV.

This plate exhibits the short forceps applied to the sides of the head of the child when low down in the pelvis, the occiput being turned to the symphysis pubis, and consequently the ears opposed to the sides of the pelvis.

Although this is the most favourable position of the head at the outlet of the pelvis, still, want of room, exhaustion, hemorrhage, convulsions, &c. may justify the employment of the forceps.

Vide page 99.

Plate, 4.



Plate, 5.

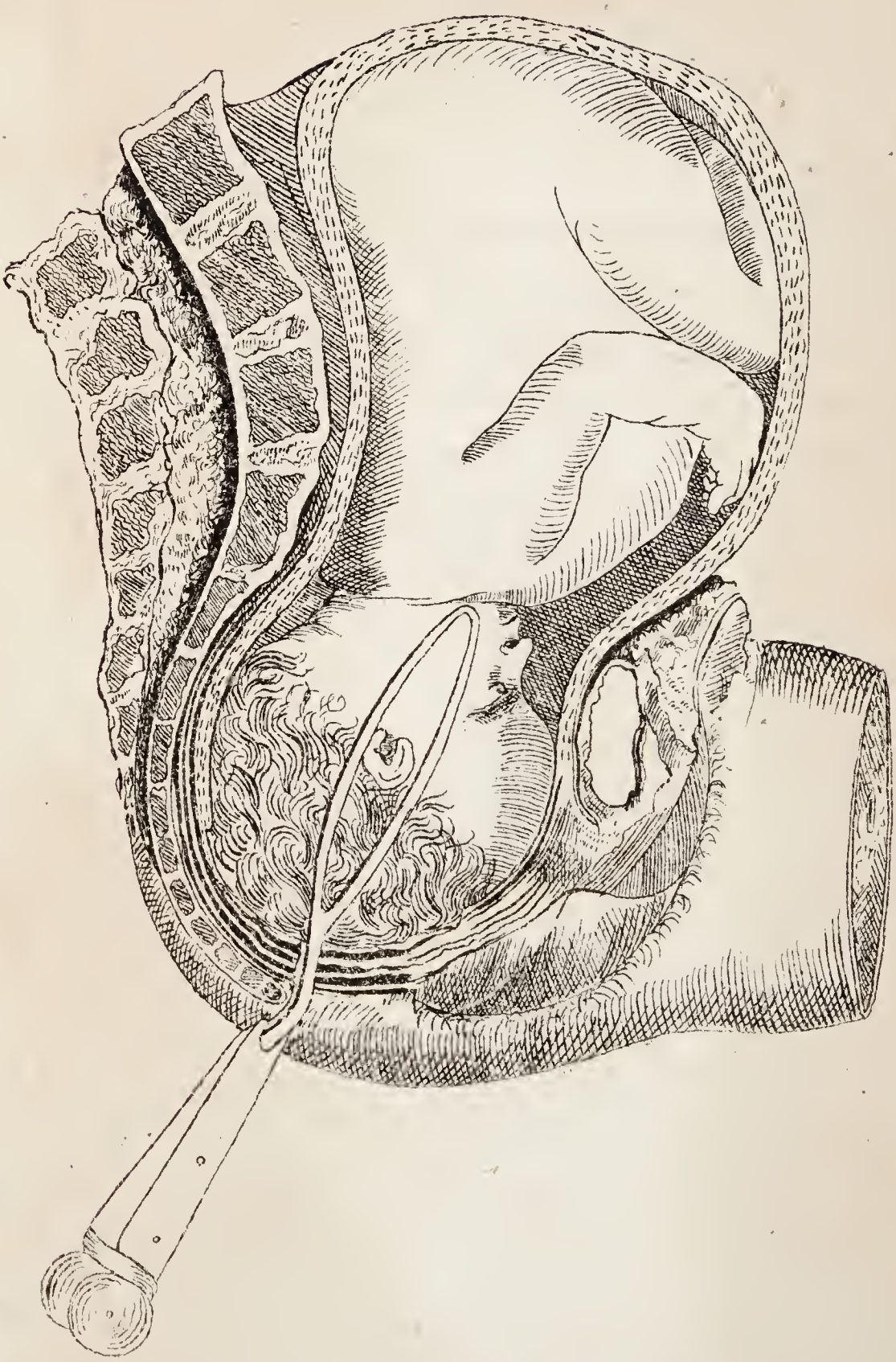


PLATE V.

In this representation, the ears are in the same relation to the circumference of the pelvis as in the former plate, but the occiput instead of being opposed to the pubes is in the *hollow* of the sacrum.

Vide page 100.

PLATE VI.

The forceps are exhibited in this plate as applied in a case in which the ears of the child are opposed to the symphysis pubis, with the *occiput and forehead opposed to the sides of the pelvis*, the head being within the cavity.

Vide page 102.

Plate. 6.

Plate. 7.

PLATE VII.

This engraving exhibits the method of affording aid with the short forceps, when the *face* is the presenting part at the outlet; the chin being opposed to the pubes, —this being the most favourable position.

Vide page 104.

PLATE VIII.

The *forehead* is represented in this plate as the part which presents at the brim of the pelvis; a case in which the *lever* may be advantageously used if fixed over the occiput, so that during each paroxysm of pain the back of the head may be drawn down, whilst the forehead is at the same time gently elevated by one or two fingers of the other hand, so as to cause a closer approximation of the chin and chest.

Plate, 8.

Plate, 9.

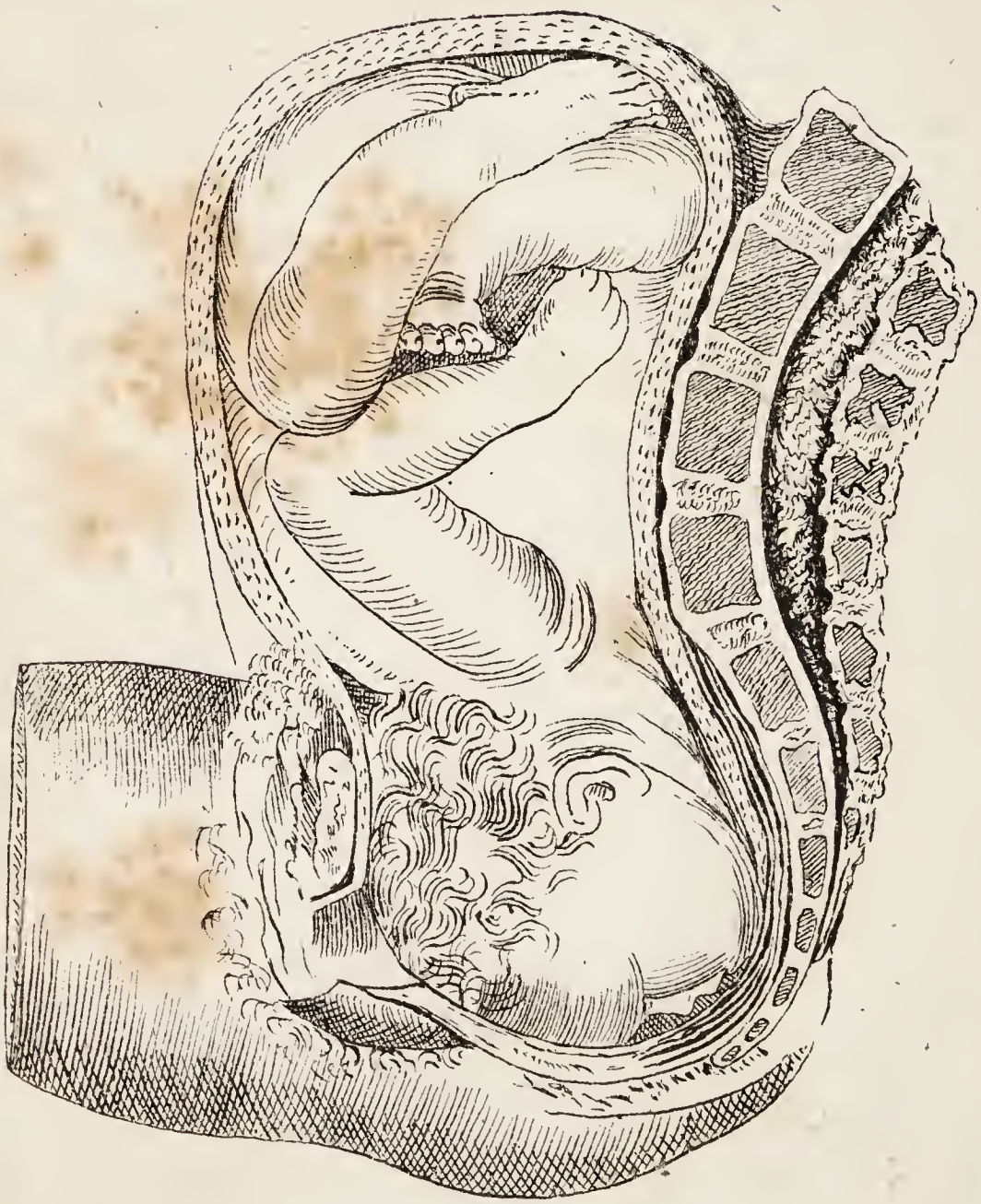


PLATE. IX.

This plate is intended to represent the most unfavourable position of the chin in a presentation of the face. The chin is exhibited in the hollow of the sacrum.

Vide page 105.

PLATE X.

This engraving represents the head of the child in its most natural position at the brim of the pelvis, but having the *placenta* interposed between it and the os uteri, so that on the dilatation of the neck and mouth of the womb hemorrhage is *unavoidable*, and places the woman in the most imminent danger.

Vide page 158.

Plate, 10.

Plate, 11.

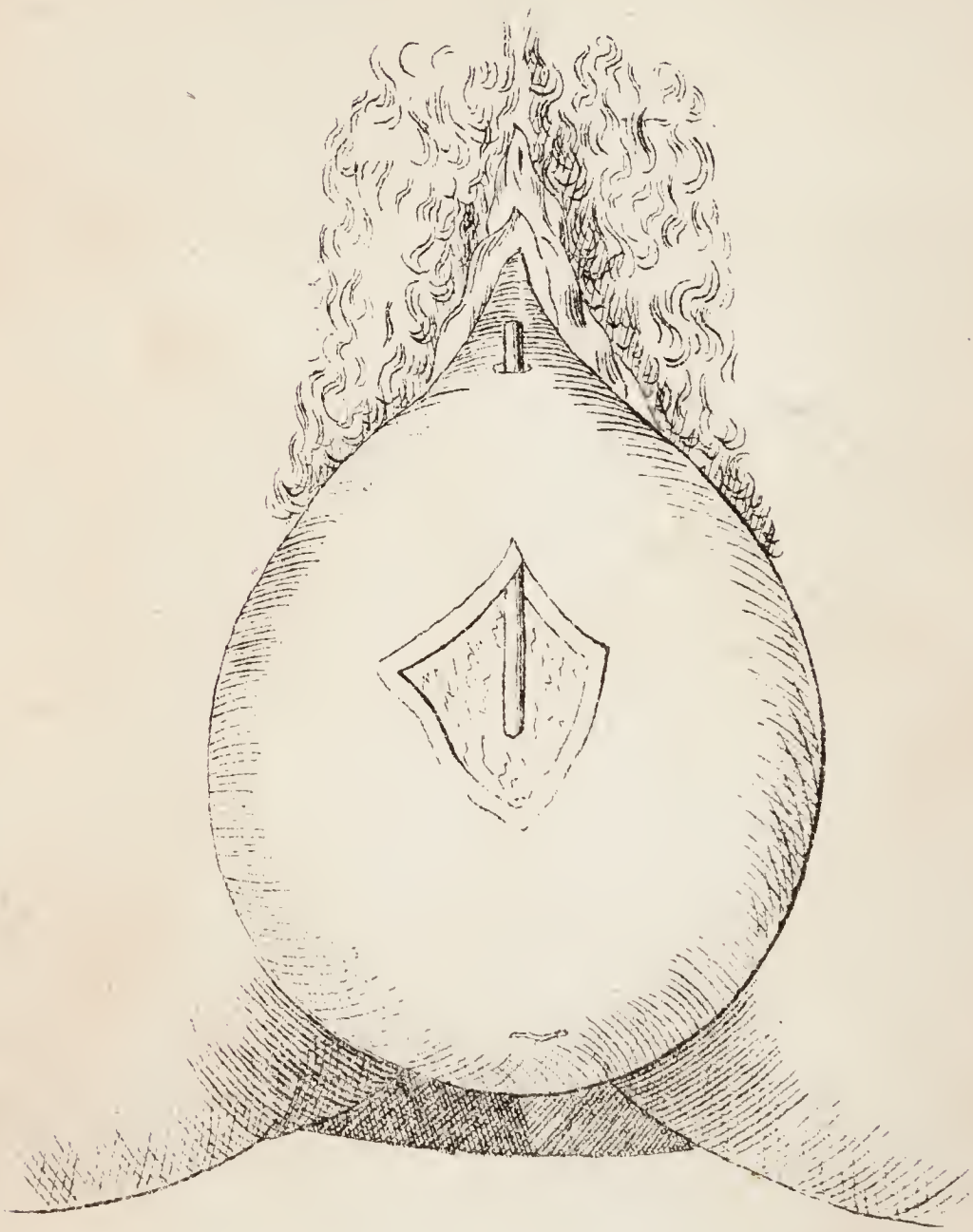


PLATE XI.

This plate is an exhibition of a case of procidentia uteri It forms a tumour, which is supposed to be hanging pendulous between the thighs of the patient. Of course the bladder occupies the upper and anterior part of it.

The fundus of the bladder is laid open, to show the unnatural course taken by the urethra in this disease, so that one extremity of a bougie is seen at the orificium urethræ, and the other directed downwards.

PLATE XII.

Figure 1. THE SHORT FORCEPS.

The short forceps measure, from the point of the blade to the extremity of the handle, *eleven inches and a half.*

The *blades* are *five* inches in length, exclusive of the curve. Their greatest width is at the middle, and measures *two inches and an eighth ;* the fenestræ at that part being *one inch and a half wide ;* the opening at the points and shoulders being about *half* an inch. The alæ of the blades should not exceed a *quarter of an inch* in width ; and the widest part, between the opposite blades ought not to measure more than *two inches and a half,* or *five-eighths.*

The *shank* of either blade is just *two inches* in length, extending from the shoulder of the blade to the locking part of the handle, making the blades altogether *seven inches* in length. The curvature of this part of the instrument is so faithfully represented in the plate, as to render any explanation unnecessary.

The *handles* are about four inches and a half in length. The one, which when viewed with the concavity of its blade upwards, and with the convexity of the curvature in the shank to the left hand, has the lowest three inches and a half of it so constructed, as to be moveable by a screw, as is clearly exhibited in the plate.

Figures 2 and 3 represent detached parts, or rather the two distinct blades of the same instrument, and can require no explanation.

Figure 4.

THE CRANIOTOMY FORCEPS.

This instrument is *twelve* inches in length. The blade which is applied externally to the cranium, and which is hollowed out, has fixed into it *twelve* sharp teeth, not rising above its edges. This blade is four inches and a half in length from its point to the joint of the instrument, being half an inch longer than the inner blade, to carry up to any pendulous part of the os uteri, which might otherwise be included in the grasp. The opposite blade, which is to be introduced within the cranium, is only four inches in length: its hollow is filled with a piece of steel, having a convex surface perforated with twelve holes to receive the angular points of its antagoniziug blade; so that when the cranium is firmly pressed between them, the teeth transfix it, and secure a very commanding hold. The *shanks* are five inches in length, and curved, the concavity corresponding with the curve of the blades. This construction is intended to accommodate the instrument to the perinæum in those cases in which it must be endangered by pressure if the shanks were straight, in consequence of the necessity which may exist for carrying the blades over and anteriorly to the pubes; thus this one instrument becomes adapted at once to ordinary cases, and to such as present unusual difficulty.

The parts which may be more strictly called the handles, are not more than two inches and a half in length.

The presumed superiority of these instruments over those in ordinary use, is fully treated of in pages 91 and 106, to which the reader is referred.

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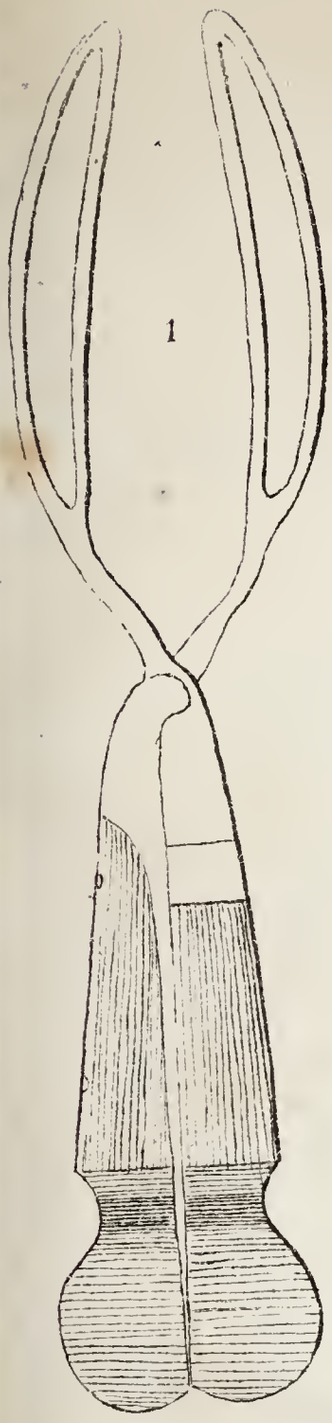
Plate, 12.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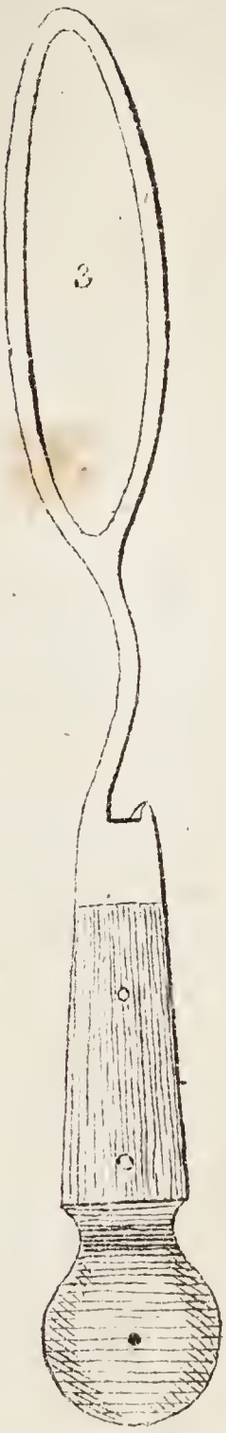
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